Cent Discount
NEW BOOKS
H. KIMPTON.
Wardour St.

LIBRARY
OF THE
Charing Cross Hospital Medical School.

Case N Y
Shelf 3 6
No. 6

SHL
WITHDRAWN

BRAITHWAITE'S RETROSPECT.

VOL. XLVIII. JULY—DECEMBER, 1863.

Digitized by the Internet Archive
in 2026

https://archive.org/details/retrospect-of-medicine_july-december-1863_48

THE

RETROSPECT OF MEDICINE:

BEING

A HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

W. BRAITHWAITE, M.D.,

LATE LECTURER ON MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN AT THE LEEDS SCHOOL OF MEDICINE, ETC.

AND

JAMES BRAITHWAITE, M.D. Lond.

VOL. XLVIII. JULY—DECEMBER,

1863.

LONDON:

SIMPKIN, MARSHALL, AND CO.

EDINBURGH: OLIVER AND BOYD. DUBLIN: HODGES AND SMITH.

MDCCCLXIV.

Letters for the Editors, to be addressed

Dr. Wm. Braithwaite, Clarendon House, Clarendon Road, Leeds; *or,*

Dr. James Braithwaite, 1, Woodhouse Square, Leeds.

Parcels of Book, &c., to

Messrs. Simpkin, Marshall, & Co., London.

D. I. ROEBUCK, PRINTER, 14, TRINITY, STREET, LEEDS.

CONTENTS OF VOL. XLVIII.

SYNOPSIS.

PRACTICAL MEDICINE.

DISEASES AFFECTING THE SYSTEM GENERALLY.

ARTICLE.		AUTHOR.	PAGE.
1	On Gout, Rheumatism, Rheumatic Gout, and Sciatica	*Dr. Henry Wm. Fuller*	1
2	On the Treatment of Rheumatic Fever	*Dr. J. Birkbeck Nevins*	9
3	On the Treatment of Acute Rheumatism	*Dr. Thomas Inman*	12
4	On Depletion and Excessive (?) Stimulation in Serious Cases of Acute Disease	*Dr. Lionel S. Beale*	16
5	On the Hemostatic Treatment of Cholera, Hemorrhage, Exhaustion, etc	*Dr. Thomas A. Wise*	18
6	On some Points in the Pathology of Tumours, Tending to Illustrate the Subject of their Diagnosis ..	*Thomas Bryant, Esq.*	20
7	On the Recurring Fibroid Tumour	*Do.*	23
8	On Epithelioma, or Epithelial Cancer	*Do.*	23

DISEASES OF THE NERVOUS SYSTEM.

9	On the Therapeutics of Convulsion	*Dr. C. Bland Radcliffe*	25
10	On Chorea	*Dr. W. S. Kirkes*	30
11	On Inhalation of Oxygen, Ammonia, and Bromoform in Cases of Epilepsy, Spasms, and Paralysis	*Dr. Ramskill*	32
12	On the Treatment of Delirium Tremens by Digitalis	*Dr. J. W. M. Miller*	34
14	Case of Traumatic Tetanus	*Dr. John K. Barton*	34

ORGANS OF CIRCULATION.

14	On the Therapeutic Influence of Physiological Rest in Pericarditis and other Internal Diseases ..	*John Hilton, Esq.*	41

ORGANS OF RESPIRATION.

ARTICLE.	AUTHOR.	PAGE.
15 A Cheap Spirometer	*Dr. W. E. Bowman*	47
16 On the Treatment of Aphonia by the Direct Application of Galvanism to the Vocal Cords	*Dr. Morell Mackenzie*	49
17 Tannin in Diseases of the Respiratory Organs	*M. Woillez*	52
18 On the Pathology of Tubercle	*Dr. J. Hughes Bennett*	53
19 On Asthma	*Dr. J. B. Sanderson*	57
20 Some Account of the Datura Tatula, and its Use in Asthma	*Dr. J. F. M'Veagh*	59
21 On the Action of Expectorant Remedies	*Dr. W. T. Gairdner*	60

ORGANS OF DIGESTION,

22 On the Mineral Acids in Dysentery	*Dr. James Henderson*	67
23 On the Treatment of Acute Hepatitis in its Suppurative Stage	*Dr. J. C. Cameron*	69
24 On Gall Stones	*Dr. J. L. W. Thudichum*	73

URINARY ORGANS.

25 What is Diabetes?	*Dr. Robert Venables*	75
26 New Test for Diabetic Sugar	*M.M. Trousseau and Dumontpalier*	80
27 On the use of Citrate of Ammonia in Cases of Irritable Bladder, with Urine of Low Specific Gravity	*R. H. Meade, Esq.*	81

SURGERY.

DISEASES OF BONES AND JOINTS, &c.

28 On Disease of the Hip-joint	*Richard Barwell, Esq.*	83
29 On Excision of the Knee-joint	*R. G. Butcher, Esq.*	86
30 On Resection of the Knee-joint in Children	*Thomas Smith, Esq*	90
31 On Inflammation of the Epiphyses, or the Articular Extremities of Bones	*Thomas Bryant, Esq.*	93
32 On Dislocations of the Thumb at the Metacarpo-Phalangeal Joint	*J. C. Wordsworth, Esq.*	96

ORGANS OF CIRCULATION.

ARTICLE.	AUTHOR.	PAGE.
33 Case of Death following the Subcutaneous Injection of a Nævus	*Robert B. Carter, Esq.*	99

ORGANS OF RESPIRATION.

34 Description of a Laryngoscope	*Francis Mason, Esq.*	101

ALIMENTARY CANAL.

35 An Unusual Form of Double Hare-lip	*R. G. Butcher, Esq.*	103
36 On Hare-lip	*Thomas Bryant, Esq.*	110
37 A Case of Inguinal Hernia Treated Successfully by Prof. Chisholm's Method	*J. J. Dickinson, Esq.*	115
38 On the Use of the Clamp in the Treatment of Hæmorrhoids and Prolapsus	*Henry Smith, Esq.*	117

ORGANS OF URINE AND GENERATION.

39 Description of a New Instrument for the Relief of Retention of Urine in Cases of Tight Stricture of the Urethra	*Dr. P. H. Watson*	122
40 On Catheterism in Cases of Hypertrophy of the Prostate	*Henry Thompson, Esq.*	124
41 Superiority of Vulcanized Caoutchouc over any other Substance for the Fabrication of Bougies ..	*Prof. Nelaton*	126
42 Extraction of a Bougie, Twelve Inches Long, from the Bladder	*Wm. Fergusson, Esq.*	126
43 Operation for the Cure of Varicocele by Wire Ligature	*Barnard Holt, Esq.*	130
44 Radical Cure of Varicocele	*Dr. John H. Packard*	131
45 On the Use of Tincture of Iodine in Urethritis ..	*M. Oscar Max*	132
46 The Endoscope, and its Application to the Diagnosis and Treatment of Diseases of the Urinary Passages	*M. Desormeaux*	134
47 On the Treatment of Onanism	*John Hilton, Esq.*	137

DISEASES OF THE SKIN.

48 On the Influence of the Gouty Diathesis, and of Alcoholism in the Production of Diseases of the Skin	*Dr. George Ross*	139
49 Efficacy of Sesquichloride of Iron for the Treatment of Ulcers about the Nails	*Dr. M. Billon*	143
50 On the Treatment of Eczema	*Dr. T. McCall Anderson*	144
51 On the Treatment of Eczema	*Dr. J. Wallace*	151

ARTICLE.	AUTHOR.	PAGE.
52 On the Treatment of Psoriasis and Lepra	*George Nayler, Esq.*	152
53 On the Treatment of Carbuncle	*A. Prichard, Esq.*	154
54 Fine Clay as a Dressing to Sores	*Dr. Schreber*	159
55 On a Case of Anæmic Sphacelus	*Dr. A. S. Myrtle*	159
56 How to Prevent Pitting after Small-pox	*Dr. F. Bowen*	164
57 On Nitrate of Silver to Prevent the Pitting of Small-pox	*J. Higginbottom, Esq.*	165

DISEASES OF THE EYE AND EAR.

58 On the Operation of Abscission in Staphyloma	*G. Critchett, Esq.*	166
59 Forceps to Fix the Globe in any Operation on the Eye	*J. F. Streatfeild, Esq.*	172
60 Vascular Cornea and Granular Lids—One Eye Treated by Inoculation, the other by Peritomy	*George Lawson, Esq.*	175
61 On Syndectomy	*Dr. C. Bader*	177
62 On a New Method of Operating in Strabismus	*Dr. Armstrong Todd*	179
63 On the Treatment of Strabismus at the Royal London Ophthalmic Hospital	*George Lawson, Esq.*	182
64 On Stricture of the Lachrymal Duct	*Haynes Walton, Esq.*	184
65 On the Use of Tannin in Inflammatory Affections of the Conjunctiva	*Dr. G. R. Sheraton*	186
66 Practical Observations on the Treatment of Purulent Ophthalmia in Infants	*J. C. Wordsworth, Esq.*	188
67 Clinical Remarks on the Treatment of Purulent Ophthalmia	*Ernest Hart, Esq.*	189
68 Catarrhal Ophthalmia	*Dr. James Henderson*	191
69 On Iridectomy in Destructive Ulceration of the Cornea	*Robert B. Carter, Esq.*	192
70 On the Effects of the Solution of the Calabar Bean on the Accommodation of the Eye and on the Pupil	*Dr. J. Soelberg Wells*	195
71 On the Ordeal Bean of Calabar	*Dr. Thomas R. Fraser*	199
72 On the Calabar Bean as a New Agent in Ophthalmic Medicine	*Dr. D. Argyll Robertson*	202
73 On the Employment of the Alkaloid of the Calabar Bean in Prolapsus of the Iris	*Thomas Nunneley, Esq.*	203
74 Case of Mydriasis Treated by the Solution of Old Calabar Bean	*Ernest Hart, Esq.*	204
75 Observations on some of the Effects of the Application of the Calabar "Ordeal Bean" to the Eye	*Dr. John W. Ogle*	206
76 On the Use of Atropine Paper	*J. F. Streatfeild, Esq.*	211
77 Cases of Amaurosis Produced by Tobacco	*J. C. Wordsworth, Esq.*	212
78 On Smoking as a Cause of Optic Atrophy	*Ernest Hart, Esq.*	213
79 Eczema of the External Auditory Passages	*Dr. T. McCall Anderson*	215

SYPHILITIC AFFECTIONS.

80 On the Syphilitic Affections of Internal Organs	*Dr. Samuel Wilks*	217
81 On the Modern Treatment of Syphilis	*A. Fleischmann, Esq.*	222
82 On Inherited Syphilis	*J. Hutchinson, Esq.*	224

MIDWIFERY,

AND THE DISEASES OF WOMEN AND CHILDREN.

ARTICLE.		AUTHOR.	PAGE.
83	Ruptured Vagina during Labour; Child in Abdomen Three and a half hours; Pelvic Cellulitis; Recovery	*Dr. John Henry Bell*	225
84	On Impregnation	*Dr. F. J. W. Packman*	227
85	On Inducing Premature Labour with Caoutchouc Bags	*Dr. Alexander Keiller*	228
86	On a Case of Premature Labour Induced by Ergot	*Dr. F. H. Ramsbotham*	233
87	The Induction of Premature Labour by Means of Nitrate of Silver	*Prof. Giordano*	234
88	On the Treatment of Puerperal Convulsions	*W. W. Jones, Esq.*	234
89	On Chloroform in Puerperal Convulsions	*Dr. John M'Nab*	236
90	Cases of Puerperal Convulsions Treated with and without Bleeding	*R. Prosser, Esq.*	241
91	On the Injurious Effect of Chloroform Inhalation during Labour	*Dr. Robert Johns*	243
92	On the Administration of Secale Cornutum	*Dr. John W. Beck*	244
93	On the Treatment of Placenta Prævia	*Dr. E. W. Murphy*	246
94	Case of Placenta Prævia; Removal of Placenta before Delivery	*Dr. D. M. Williams*	247
95	On the Delivery of the Child in Protracted Labour	*Dr. E. W. Murphy*	247
96	On a New Mode of Securing the Handles of the Forceps during Delivery	*Dr. W. Gayton*	251
97	On a Case of Coexisting Extra- and Intra- Uterine Pregnancy	*J. P. Pennefather, Esq.*	252
98	Case of Presentation of the Right Arm and Shoulder —Delivery by the Natural Powers, or Spontaneous Evolution	*Dr. Richard Hodges*	255
		William Furnivall, Esq.	257
99	Case of Triplets	*Dr. E. P. Bennett*	258
100	New Manner of Plugging the Vagina		
102	The Use of Wire Loops, Horse-Shoe Wires, etc., for Correcting Anti- and Retro-Version, Obliquity and Prolapse of the Unimpregnated Uterus	*Drs. Clay, Hewitt, Routh, Barnes, &c.*	260
103	On Pelvic Hæmatocele	*Dr. A. H. M'Clintock*	264
104	On Eruptive Fevers in Puerperal Patients	*Dr. J. Y. Simpson*	270
105	Sore Nipples	*Dr. William H. Castle*	272
106	On the Thrombosis and Embolia of Lying-in Women	*Dr. R. Barnes*	273
107	On the Broncho-Pneumonia of Lying-in Women	*Do.*	281
108	On the Nature, Treatment, etc., of Puerperal Peritonitis	*J. T. Mitchell, Esq.*	282
109	On the State of the Internal Surface of the Uterus after Delivery	*Dr. J. M. Duncan*	287
110	A New Method of Extirpating Large Polypi	*Prof. Simon*	291
111	Case of Polycystic Disease of the Right Ovary; with Ulceration through the Walls of the Bladder	*Henry Smith, Esq.*	291
112	On a Case of Retained Menses of Two Years duration, caused by Atresia Vagina; Puncture of the Uterus by the Rectum; Recovery	*I. B. Brown, Esq.*	295
113	On Ovariotomy, the Mode of its Performance, and the Results obtained at the London Surgical Home	*Do.*	298
114	On a Double-Jointed Uterine Pessary	*Dr. D. E. Wilkie*	307
115	On the Use of Medicated Pessaries in the Treatment of Uterine Disease	*Dr. T. Hawkes Tanner*	310
116	On the Action of Nitrate of Silver	*Robert Ellis, Esq.*	312
117	On the Treatment of Croup and of the Throat Affection in Scarlatina	*Dr. G. Hamilton*	316
118	On the Treatment of Hooping-cough by Belladonna and Sulphate of Zinc	*E. Garraway, Esq.*	318

ARTICLE.	AUTHOR.	PAGE.
119 On the Treatment of Hooping-cough	*Dr. H. W. Fulle*	320
120 Treatment of Hooping-cough with the Bromide of Ammonium	*Dr. G. D. Gibb*	321

MISCELLANEOUS SUBJECTS.

121 On Assimilation and the Influence of its Defects on the Urine	*Dr. F. W. Pavy*	323
122 Notes Referring to Invalids who are about to proceed up the Nile	*Dr. A. Leith Adams*	327
123 Syphilitic Tubercle of the Eyelid; its Diagnosis and Treatment	*J. Vose Solomon, Esq.*	333
124 An Attempt to Restore to its Natural Appearance a Putrified Dead Body, in order to prove its Identity	*Dr. B. W. Richardson*	336
125 Royal Humane Society's Instructions.—Directions for Restoring the Apparently Dead		340
126 Liquor Bismuthi		342
127 Cinchonine		343
128 Case of Poisoning by Chloroformic Anodyne	*Dr. George Harley*	343
129 On the Treatment of Cases of Poisoning	*Dr. W. R. Hatrick*	345
130 On Gold Dust and Iron Filings as an Antidote for Corrosive Sublimate	*Dr. Christopher Johnson*	347
131 On the Treatment of Snake-Bite	*Dr. Moriarty*	350
132 Case of Poisonous Snake-Bite	*Dr William Shaw*	351
133 Galvanism in Poisoning by Opium	*Dr John W Ogle*	352
134 Poisoning by Cyanide of Potassium—Dangers to Photographers	*Dr Davanne*	353
135 On Nitrate of Silver	*John Higginbottom, Esq.*	354
136 Formula for a Solution of Bromine	*Dr. J. Lawrence Smith*	355
137 On Iodine as a Deodoriser and Disinfectant	*Dr. B. W. Richardson*	356
138 On the Use of Collodion with Glycerine in Erysipelas		357
139 "Red Vulcanite" in Dentistry	*Dr. Edward Wells*	357
140 The Actual Cautery	*M. Nelaton*	358
141 Tartar Emetic Plaister	*M. Mailhe*	359
142 Some Observations on the Iodic Test for Morphia	*A. Dupre, Esq.*	359
143 An Inquiry into the Action and Uses of Atropia	*Dr. Alexander Fleming*	363
144 On the Therapeutic Properties of Carbolic Acid	*Crace Calvert Esq.*	367
145 On Sea-Sickness	*Dr. John Alston*	369
146 On an Improved Mode of Using Refrigeration as an Anæsthetic and as a Remedy	*Dr. James Arnott*	372
147 The Relations of Height and Weight in the Human Body		373
148 On the Unfavourable Influence of Sudden Change of Climate	*Dr. J. Henry Bennet*	374
149 On the Action of Medicines	*Dr. David Nelson*	376
150 On the Natural History and Treatment of Hip-Joint Disease	*Richard Barwell, Esq.*	384
151 On the Importance of Tapping the Joints and Bursæ Mucosæ	*Professor Inzani*	385
152 The Operation for the Radical Cure of Hernia	*J. Wood, Esq.*	386
153 Physiological Properties of Nitro-Benzole and Aniline	*Dr. Letheby*	388
154 Antidotes for Strychnia	*Professor R. Bellini*	390
155 Bromides in the Water of the Dead Sea	*M. Roux*	391

INDEX.

A SYNOPSIS,

CONTAINING A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOLLOWING PAGES: SHOWING, AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS WITHIN THE LAST HALF-YEAR. (ARRANGED ALPHABETICALLY.)

AFFECTIONS OF THE SYSTEM GENERALLY.

ACUTE RHEUMATISM.—I find cases of acute rheumatism are far more successfully treated by the free exhibition of lime-juice than any other plan. I have tried the alkaline plan of treatment, so much followed in London, and found it fail. The way I employ the lime-juice is simple:—The patient is directed to take at least eight ounces of it in the day, and no other medicament of any kind whatever is used unless it be opium to procure sleep at night. If the skin is very white, the tongue much loaded, and the perspiration excessive, two drachms of the tincture of sesquichloride of iron are given in addition during the twenty-four hours, and some wine at dinner-time and in the evening. If, during the progress of the case, the hands or feet become unusually swelled or painful, they are merely wrapped up in cotton-wool, which has been freely sprinkled over with tincture of camphor. If the heart become affected I make no difference in the plan proposed; I continue the lime-juice as if nothing unusual had occurred, with the full confidence that the complication will be evanescent, nor have I yet been deceived. When this accident occurs, mercury, bleeding, or cupping, seem to me to have the effect of aggravating the mischief and of rendering a transient complaint a permanent disease. Lemon-juice is inferior to lime-juice, though, to a very small degree, so that we infer that it is not the particular acid which does the good. (Dr. T. Inman, p. 12.)

EPITHELIAL CANCER.—The caustic application used at Guy's Hospital for the destruction of epithelial growths, is composed of equal parts of chloride of zinc and plaster of Paris. (Mr. T. Bryant, p. 23.)

INFLAMMATION.—The term inflammation has become so very vague as frequently to cause error and confusion. Exudation of the liquor sanguinis is the only morbid phenomenon, which, whenever it occurs, unequivocally characterises an inflam-

mation. Hence, those who continue to use the term inflammation, can only do so with exactitude in the sense of an exudation of the liquor sanguinis. The exudation having taken place, it may either live or die; if it die slowly, with disintegration of tissue, we have ulceration; if rapidly, with chemical decomposition, we have mortification; if it die what may be called a natural death, being broken down, liquified, and at length absorbed, we have resolution. An inflammation occurring, venesection may do good, when used locally, and the inflammation is superficial and limited, by relieving congestion; but it must never be used under other conditions, and if exudation has occurred, it cannot remove that. The absorption of an exudation by cell transformation demands vital force, and is arrested by weakness; hence, the fatality of inflammations in weak persons. The strong pulse, fever, and increased flow of blood in the neighbourhood of inflamed parts are the results, and not the causes of inflammation, and show that the economy is actively at work repairing the injury; they should, therefore, be encouraged locally by warmth, internally by nutrients. We must support the vital strength of the economy, not by over stimulating, but by attending to those circumstances which restore the nutritive processes to a healthy condition. The truth of these doctrines is shown most forcibly by the result of their application to the treatment of pneumonia. (Dr. Hughes Bennett, *Lancet*, *May* 30, 1863, *p.* 600.)

Rheumatic Fever.—From the very commencement of the case give quinine and iodide of potassium—two grains of the former four times a day, with five grains of the latter added to each dose. The presence of acute pain and high febrile excitement does not contraindicate their employment. The use of quinine is at once suggested by the similarity in many of the symptoms to those of ague. Opium should be given, when necessary, to procure sleep. A second important element in the treatment, is the employment, from the very first, of steam-baths, even when the patient is so helpless that it is impossible to move him from the bed on which he is lying. These steam-baths relieve the pains, and actually check the profuse sweats. Two bricks, sufficiently heated for the purpose, should be wrapped in flannel thoroughly soaked in vinegar, and laid on two plates, and placed in bed with the patient, whose body-linen has previously been removed. A refreshing acid steam-bath is thus obtained, and the supply of steam may be kept up, if necessary, by renewing the hot bricks. In about fifteen minutes the bed-clothes and plates should be removed, and the patient instantly mopped all

over very rapidly with a towel wrung out of cold water, and then should be quickly rubbed dry. If the removal and subsequent replacing of the night-shirt is impossible from the pain caused, it should be torn open from top to bottom down the back. It may then be removed and replaced with the greatest ease. The author has tried all the other plans of treatment recommended, but invariably comes back to this, finding it the most successful. (Dr. J. B. Nevins, p. 9.)

Rheumatic Gout.—Rheumatic gout is a disease, *sui generis*, totally distinct from gout, and equally so from rheumatism. Rheumatic gout has a history and pathology of its own. In the aggravated and protracted cases the pathological changes are, absorbed fibro cartilages of the joints, eburnation of the articular surfaces, enlargement of the heads of the bones, with alteration in shape, by the occurrence of interstitial absorption in some parts, and of osseous deposits in others. Foreign bodies of varying consistence and character are often developed both within and without the joints. In the early stages of the disease the capsules of the affected joints are distended with fluid, the synovial membrane is thickened and intensely vascular, and vascular tufts or excrescences exist at the margins of the cartilages. The precise morbid chemical actions which lead to these changes are not known; but we know that the blood does not contain uric acid as in gout. The disease comes on in persons who, from any cause whatever, are in a low state of health, either from inherited scrofula, from syphilis, loss of blood, sexual excess, or over-work. It is, however, most common in feeble delicate women. In our treatment, the first object should be the sustentation of the general health, and the restoration of tone to the system. The remedies which are most serviceable in rheumatism and gout are of little avail in this form of disease. Colchicum, iodide of potassium, guaiacum, hot baths, vapour baths, and other similar remedies prove mischievous rather than beneficial. They depress and enervate the patient who is already low and exhausted. In the majority of cases, the most successful plan, notwithstanding the acute character of the symptoms, is to administer bark or quinine in combination with small doses of alkalies, and as soon as possible to check the continuance of the enfeebling clammy sweats, by means of the cold shower-bath or dripping sheet. Iron in its different forms, the mineral acids, and cod-liver oil, are useful in many cases. These, however, in some cases are inappropriate; but this may be readily determined by the collateral symptoms present. Thus, if a patient is better in summer than winter, warmth, by additional clothing, or a warmer climate, is

required; if better in cold than in warm weather, the daily use of a shower-bath may be confidently recommended. A patient when having a shower-bath should stand in hot water. (Dr. H. W. Fuller, p. 1.)

Tumours.—The more simple and innocent a tumour, the more nearly it approaches in structure the highly organized portions of the body; the more malignant a tumour, the more it approaches the most elementary or embryonic. In proportion, therefore, to the amount of the cell element in a tumour, may its cancerous tendency be determined; and the greater the proportion of the fibrous or well developed structure, the greater the probability of its nature being innocent or simple. Simple tumours will never do more than separate the parts between and beneath which they are developed; cancerous tumours, as a rule, infiltrate the parts, but never separate them. The skin may be stretched and attenuated by a simple tumour so as to ulcerate or burst; but it will never be infiltrated with the tumour's elements. The skin covering a cancerous tumour becomes rapidly involved, it seems drawn down to it, and as if glued to its surface; and when ulceration has commenced, the edges are palpably indurated, thickened, and infiltrated with cancerous products. Cancerous tumours have a marvellous tendency to multiplication, and never exist for any period without implicating the lymphatics of the part with which they are connected. In a case of tumour the nature of which is doubtful, from both its local and general conditions, the presence or absence of an indurated absorbent gland (not an inflamed one) will tend more than anything else to solve the problem. (Mr. T. Bryant, p. 20.)

Recurring Fibroid Tumours.—The recurring fibroid tumour is a connecting link between innocent and malignant growths. They have a constant tendency to return, after removal, either in the same place or in the neighbouring parts. There is nothing distinctive in their external character by which they can be known. Microscopically they possess more of the cell element than the innocent form, and the more rapid the development of a tumour the more cellular its structure. (Mr. T. Bryant, p. 23.)

AFFECTIONS OF THE NERVOUS SYSTEM.

Chorea.—The indications in the treatment of chorea vary with the case. If there is suspicion of the presence of rheumatic poison in the blood, the alkaline treatment of rheumatism may be safely employed, along with other measures. When

the nervous system is debilitated, as it almost invariably is, we must endeavour to promote its more perfect nutrition by generous diet, cod-liver oil, and neurine tonics, as quinine, iron, zinc, and arsenic. Hence the use of out-door exercise, cold sponging, and shower-bath. In the acute and violent forms of the disorder, our chief object must be to put a stop, as speedily as possible, to the violent involuntary movements, and to the attendant sleeplessness, for if these continue long they tend almost certainly to kill by exhaustion. Opiates, combined with diffusible stimuli, are of the most use for this purpose. In some extremely violent cases, repeated inhalations of chloroform, or the subcutaneous introduction of a solution of morphia, may be required. In addition to these sedative means, the employment of wine, or even brandy, often seems to be remarkably productive of good. (Dr. W. S. Kirkes, p. 30.)

Convulsions. — *General Treatment of.* — Therapeutically, as well as pathologically, there is every reason to believe that the means to be employed in the treatment of convulsion (of every kind) are those which exalt, and not those which depress, vital action. The diet, in many cases of chronic convulsive disorder, ought to contain somewhat more than an average quantity of oily and fatty matters, and somewhat less than an average quantity of lean meat; and the action of cod-liver oil is likewise found to be very beneficial in such cases. Considering the large amount of fat contained chemically in brain-matter, this result of experience is borne out by what theory, independently, would lead us to expect. This fatty matter is combined chemically with phosphorus, and there is every reason to believe that phosphorus is also a suitable remedy in many of these cases. The phosphorus may be dissolved in ether, and a few drops of the solution be given as a dose, the oil being given separately. The phosphorus may be dissolved in the oil; but the compound is so nauseous as to disagree with most stomachs. There is reason to doubt the suitableness of belladonna as a remedy in many cases of epilepsy, and other forms of chronic convulsive disorder. Opium produces a turgescence of the vessels of the brain, whilst belladonna probably produces an anæmic condition; hence it is probable that opium is a more suitable remedy than belladonna in many of these cases. Zinc is probably a remedy equally untrustworthy. Alcoholic stimulants are, there is reason to believe, the most trustworthy anti-spasmodics in the prevention and treatment of convulsion. A glass of port wine given every half-hour, with an egg beaten up in the alternate doses, will sometimes produce sleep and

quiet in a few hours, and a continuance of the same treatment, only in a less vigorous style, will often produce a rapid cure. (Dr. C. B. Ratcliffe, p. 25.)

Delirium Tremens.—*Digitalis.*—Digitalis has been very extensively tried in delirium tremens, but has not quite sustained the reputation it had some time ago. Still it is a remedy of great value. It is useful as a calmative, but has no peculiar power over the disease. Its action is on the nervous system, while at the same time it stimulates the heart and augments its contractility. It is especially indicated in cases where there is threatened inflammation of the brain, as it does not at all increase cerebral congestion. (Dr. J. W. M. Miller, p. 34.)

Epilepsy.—*Inhalation of Oxygen.*—In cases of epilepsy, accompanied by cachexia, and a state of evidently low vital power, a more healthy state of system may be induced by the prolonged trial of inhalation of oxygen. Atmospheric air must be drawn through a glass inhaling apparatus one-third full of solution of peroxide of hydrogen. The solution must be highly charged with oxygen, or the gas is not given out with sufficient freedom. The inhalation must be continued until some sensible effect is produced on the pulse, or on the feelings of the patient, and must be repeated daily for many weeks. (Dr. Ramskill, p. 32.)

[It is not the epilepsy, but the state of cachexia which we may expect to be *primarily* benefitted. Hence, this plan of treatment may prove useful in any state of cachexia not attended by epilepsy. Probably the most likely cases will prove to be those with dark, sallow complexions, indicating deficient elimination as well as debility.—Eds.]

AFFECTIONS OF THE RESPIRATORY SYSTEM.

A Cheap Spirometer.—It is now well-known that the "vital capacity," as measured by the spirometer, is a measure more of the strength of the patient than of the physical state of his lungs. So that a man with tubercle actually present in the lung, but with considerable muscular power, will have a larger vital capacity than a man his equal in height, perfectly free from disease, but whose muscular energy is exhausted from only temporary causes, as over-exertion. Still the spirometer is useful in many cases, if only to show impaired vital power of the muscles. A description of a most efficient instrument, and, moreover, very inexpensive and readily made, will be found at p. 47. (Dr. W. E. Bowman.)

Aphonia.—*Direct Application of Galvanism to the Vocal Cords.*—In cases of aphonia where there is absence of any structural disease, or inflammatory changes, a state of impaired enervation being the sole cause, the local application of galvanism to the vocal cords offers a prospect of speedy cure. Using a magneto-electric machine, let an assistant hold a sponge directly over the thyroid cartilage; and let the operator, by means of a laryngoscope pass an electric current, direct to the vocal cords. An instrument especially contrived for the purpose is required. (Dr. M. Mackenzie, p. 49.)

Asthma.—*The Datura Tatula.*—The Datura Tatula is a plant which grows in Malta, and has for some time been used there as a remedy for asthma. The crushed seeds and dried herb, in equal parts, are smoked. In cases of pure asthma it is a remedy which rarely fails to give relief, and it may be used as a preventative when a fit is impending at night. It is less narcotic than stramonium, and rarely causes headache, or leaves any unpleasant dryness of the fauces, or sense of constriction of the pharynx, as stramonium so constantly does. The extract is made with coarsely-powdered tatula, with cold water, exhausted by percolation, and the liquor evaporated to the usual consistence by steam heat. The dose is from half-a-grain to a grain and a half. The tincture is made by digesting for seven days, one part of powdered herb in eight parts of proof spirit. Dose—20 to 60 minims. (Dr. J. F. M'Veagh, p. 59.)

Croup: Diphtheria.—*To Apply a Solution of Nitrate of Silver to the Larynx.*—Attach a short arm, two and a quarter inches long, to a longer one, both of whalebone, tolerably firm, at a bend not quite that of a right angle. Along the upper surface of this attach a piece of india-rubber tubing of the smallest size. Place the solution to be introduced in a watch-glass, and suck it up into the tube, preventing its return by compressing the tube with the finger at the proximal extremity. About a quarter of a drachm, or rather more, is a proper quantity. Pass the instrument over the tongue, and then, by withdrawing the pressure of the finger, allow the fluid to drop into the larynx. (Dr. G. Hamilton, p. 316.)

Excessive Bronchial Secretion. — *Tannin.* — In cases of bronchitis, and pulmonary congestion, attended with much mucous secretion, and even many cases of phthisis, tannin is a valuable remedy from its power of arresting this secretion. It may be given in pills, as it is disagreeable to take in solution. (M. Woillez, p. 52.)

Hooping Cough.—As soon as the whoop declares itself, every three hours give a draught containing half a grain or a grain of sulphate of zinc, and a sixth of a grain of extract of belladonna to two drachms of syrup, in from two to six drachms of water. The doses should be gradually increased until they amount to from six grains to a drachm of zinc, and from two to six grains of the extract of belladonna, according to the age of the patient. If given gradually, these doses will not occasion sickness, nor excite or heat the patient. If there is fever and oppressed breathing, this treatment is inapplicable. (Mr. E. Garraway, Dr. H. W. Fuller, pp. 318, 320.)

Bromide of Ammonium.—One of the best plans of treating hooping cough is the administration of nitric acid in syrup, combined with topical application to the larynx of nitrate of silver. Lately bromide of ammonium has been introduced, and has been found of much use in some cases of the disease. For infants, two or three grains three times a day is a proper dose; for older children, from four to eight grains. The simpler the vehicle the better. (Dr. G. D. Gibb, p. 321.)

Irritable Mucous Membrane of the Throat.—Sometimes anodyne and sedative applications are much more successful than nitrate of silver, which is so generally employed in these affections. In a case of this kind, the local use of hydrocyanic acid freely diluted, and, subsequently, of chloroform, acted very beneficially. (Mr. J. Hilton, p. 46.)

Laryngoscope.—*To Examine the Vocal Cords with the.*—It is now found that it is more convenient that the mirror should be fixed on the forehead of the operator by means of an elastic band encircling the head. It should be attached to a forehead-pad by a ball and socket joint, that the direction of the rays of reflected light may be altered at pleasure without corresponding motion of the head. The patient being seated, place a lamp, giving a brilliant and steady light, on one side of, and a little behind him. By means of the mirror, the operator may readily direct the rays of light through the mouth to the back of the pharynx. The laryngeal mirror having been previously warmed, to prevent its becoming steamed by the breath, is now passed rapidly over the tongue, and made gently to elevate the soft palate. The objects, as seen in the mirror are, of course, reversed from before backwards. Careful manipulation is often required to see the vocal cords. It is assisted by the patient saying the word "Ah!" and by holding the tongue well forwards with a towel. (Mr. F. Mason, p. 101.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

Abscess of Liver.—When we have just grounds for believing that abscess of the liver exists, we ought not to lose a day in evacuating it by puncture, and we are both justified and safe in endeavouring to hit upon it with a trocar when deep-seated. There is very little danger in thrusting an exploring trocar into the liver; indeed, Dr. Cameron states that he has never seen the slightest ill result. It is folly to wait until there is an attempt at pointing, as many die without any attempt at this, the liver having been converted into a mere purulent sac. The ribs will become denuded and carious in such cases, while the surgeon has waited for weeks to see the abscess point, the man dying worn out by fever and diarrhœa. A trocar, with canula of medium size, is preferable to either scalpel or lancet for opening the abscess. When the abscess seems pretty well emptied, the canula should be carefully fastened in by twine passed through perforations in its rim, and also by broad sticking-plaister over it, leaving a small central opening. (Dr. J. C. Cameron, p. 69.)

[Frerichs, in his work on "Hepatic Disease," lately translated for the New Sydenham Society, advocates the same treatment. He considers "the prominence of the false ribs and the obliteration of the intercostal spaces quite sufficient to justify an operation." Frerichs considers that the abscess should not be opened by simple puncture, without the use of means previously to produce adhesion of the two layers of peritoneum. Perhaps the most reliable is Begin's method. He places the patient on the bed with the upper part of the body bent forwards, and makes an incision down to the peritoneum, which he slits up upon a grooved director, and then dresses the wound with charpie. After three days the liver is found to have contracted firm adhesions to the margin of the wound, so that the abscess may be opened without apprehension.—Eds.]

Hare-lip.—The operation of hare-lip, when performed at any period of life after the sixth week, is likely to be successful. The preference should, however, always be given to about the third month of life. In the operation the following points are the most important:—First, to separate the lip freely from its attachment to the gum; secondly, to make a free section of the edges of the abnormal lip; and thirdly, to bring the parts accurately in apposition by the interrupted suture. The edges of the wound should be pared "from above downwards, leaving the inverted flap adherent at its labial border. When this is done, and the upper edges of the divided lips

have been brought together, the lower flaps may be connected by a fine suture; and, if proved to be too long, they may be curtailed; sufficient material being left to fill in the gap, which is too often the result of the other forms of operation." In cases of double hare-lip both sides should be simultaneously treated. (Mr. T. Bryant, p. 110.)

Hemorrhoids and Prolapsus.—The ligature may be almost entirely done away with in the treatment of hemorrhoids and prolapsus, by the use of the clamp invented by Mr. Henry Smith. This instrument is somewhat in the shape of a pair of scissors, and the mass to be removed is firmly held between the blades, which meet by two flat surfaces; it is then removed by a knife, and the raw surface touched with nitric acid or the actual cautery; the parts are well oiled, and the affair is finished. The disease is removed at once, and the patient is not subjected to the irritation and danger of a ligature strangulating several portions of mucous membrane for a week or more. Nitric acid should be used to the raw surface in the slighter cases; but if the diseased mass be extensive, or the parts extraordinarily vascular, the actual cautery should be employed. If there is much suffering, the application of pounded ice gives great relief. It is an improvement to have the inferior surface of the blades of the clamp made rather concave, as a larger portion of the diseased tissue can be thereby secured. (Mr. Henry Smith, p. 117.)

Typhoid Dysentery.—In this disease, as it occurs at Shanghai, typhoid symptoms commence within a few days, along with great prostration and brown tongue. Wine, brandy, ammonia, camphor, and opium, seemed in many cases useless. Quinine when retained appeared to do good, but only in some cases would it remain on the stomach. As there is in such cases a decided increase in the alkalinity of the blood, along with alkaline urine, Dr. Henderson gave hydrochloric acid, generally along with some bitter tonic and laudanum, and with great success. The use of the same acid in all cases of fever, attended with a very low typhoid state, will be found an admirable adjuvant to other means of treatment. (Dr. J. Henderson, p. 67.)

AFFECTIONS OF THE URINARY ORGANS.

Diabetic Sugar.—*New Test for.*—When a few drops of tincture of iodine are added to diabetic urine, the colour produced by the tincture disappears completely at the end of a few seconds. The power of the urine in producing the discolora-

tion of the tincture is in proportion to its density. (M.M. Trousseau and Dumontpalier, p. 80.)

Foreign Bodies in the Bladder.—Such an object as a piece of bougie, is best extracted from the bladder by an extremely small and slender lithotrite. These are made of such calibre, that the blades can hold between them an object of considerable size, and yet the calibre of both may not be so great as not to pass readily along the urethra. (Prof. Fergusson, p. 126.)

Irritable Bladder.—*Use of Iron in Certain Cases of.*—There are certain cases in which the urine is of very low specific gravity, and deficient in urea. The bladder seems to miss the accumtomed stimulant, and we have much vesical pain and irritability. Citrate of ammonia usually relieves this state of irritability. The form in which it is prescribed is one drachm of sesquicarbonate of ammonia with one drachm and fifteen grains of citric acid, mixed with six ounces of water. An ounce of this mixture to be taken three or four times a day. The suggestion and the explanation owe their origin to Dr. Prout, who states that he believes the citrate of ammonia may be converted into urea when taken in large quantities. (Mr. R. H. Meade, p. 81.)

Onanism.—The habit of onanism is extremely difficult to give up. The best suggestion I can offer is this:—Let a strong solution of iodine be painted over the whole of the skin of the penis every night, and if that does not make the organ too sore to touch, apply in the same way a strong blistering fluid. In almost every instance the continuance of the habit has been thus entirely prevented. (Mr. J. Hilton, p. 137.)

Operations on the Urinary Passages.—*The Endoscope.*—By means of the endoscope, an instrument invented by M. Desormeaux, and used by him in the hospital Neckar, at Paris, the whole urethral tract of mucous membrane from the meatus to the bladder may be inspected by the eye, and any alteration at once detected. The incision of stricture is greatly facilitated. The operator sees the parts it is his intention to divide, can follow the progress of the blade through the tissues, and watch every step of the procedure, as if it were performed on the surface of the body. The endoscope may likewise be applied for the examination of the nares, pharynx, and rectum, and it is adapted for the inspection of all the cavities of the body usually inaccessible to the eye. The instrument consists of a lamp, the light of which is, by a series of mirrors and lenses, conveyed into a lateral metallic tube. The accessory apparatus varies accordingly to the part to be inspected. (M. Desormeaux, p. 134.)

Retention of Urine from Stricture.—An instrument likely to prove of great use in these cases, is described by Dr. Watson, of Edinburgh. It is in the stem the size of a No. 2 or 3 catheter, and hollow, but tapering off towards the point, and solid. The opening into the catheter part of the instrument is situated on the curve. The point of this instrument passes easily through a very narrow stricture, which the further passage of the instrument dilates, thus rendering unnecessary the continued use of extremely small bougies. By the catheter being combined with the bougie, no change of instrument is required to draw off the urine. It is impossible to have a catheter as fine as the extremity of this instrument, for it becomes too weak if made hollow. The whole is made of the best steel. It may be procured of Young, Edinburgh. (Dr. P. H. Watson, p. 122.)

Urethritis. — *Tincture of Iodine.* — At its commencement urethritis is confined entirely to the extremity of the urethra and the fossa navicularis. The inflammation may be arrested at once by the local application of tincture of iodine. A small piece of cotton-wool should be firmly affixed to the extremity of a common probe, and having been impregnated with tincture of iodine, should be inserted gently into the urethra. It should be passed to the depth of about one inch. In mild cases one application is sufficient, in more aggravated forms more may be required. (M. Oscar Max, M. Boinet, p. 132.)

Varicocele.—*Radical Cure of.*—Having placed the patient under chloroform, and the vas deferens being isolated, pass a needle armed with a wire ligature through the scrotum, behind the diseased veins, and let it perforate the scrotum on the inner side. Now let the needle be inserted again, at the second opening, the wire passed in front of the veins, and so out at the first puncture. No skin is included, but merely the veins and some areolar tissue. The wires must now be twisted together so as to compress the veins, and then cut off short and left permanently; or, if this is not desired, by untwisting their ends the wires may be withdrawn. This proceeding may be repeated lower down. The pain of the operation is merely that which results from the two punctures in the skin. The operation is in itself very easy to perform, and does not even necessitate any confinement to bed. (Mr. B. Holt, p. 130.)

Vulcanized India-Rubber Bougies. — Vulcanized india-rubber bougies are perfectly flexible and unchangeable. They cause so little distress that they may be retained in the urethra during a journey without inconvenience. They are quite unaffected by moisture. The instruments in common

use made of tissue, coated with oil mixed with litharge, are soon deteriorated by humidity. (Prof. Nelaton, p. 126.)

AFFECTIONS OF THE BONES AND JOINTS, ETC.

Dislocation of the Thumb at the Metacarpo-phalangeal Joint.—The cause of difficulty in reducing these dislocations is a misplacement of the tendon of the long flexor of the thumb, which passes between the two heads of the short flexor, then in front of the joint to be inserted into the base of the second phalanx. A misplacement of this tendon is not a necessary condition of the dislocation, but an accident depending on the force and direction of the violence that produced it. It is possible to diagnose this condition at once. for if the tendon remains *in situ*, it would be perceptible, stretching over the end of the metacarpal bone, and drawn away from the first phalanx by the altered position of that bone. It is, of course, possible at once to restore the bones to position by dividing the tendon; but this is usually unnecessary, for it may be restored to position by manipulation. The wrist being fully bent, so as to relax the long flexor tendon, let the surgeon take the thumb in one hand and abduct it from the fingers, while with the other hand he steadies the metacarpal bone. He then is to rotate the thumb, so as to make the tendon retrace its course *forwards* and *inwards* around the lower end of the metacarpal bone, using the first phalanx as a lever in this intention. If this do not succeed, let him hyper-extend the first phalanx, so as to stretch the flexor tendon, rotate the phalanx *outwards*, and then carry it round the *inner* tubercle of the metacarpal bone, so as to dislodge the tendon from between the ends of the bones. This was first discovered, owing to the malposition of the tendon being visible in a case of compound dislocation. (Mr. J. C. Wordsworth, p. 96.)

Excision of the Knee-Joint.—The operation having been carried, in the usual way, to the point where it is necessary to detach the soft parts from the bones to the required extent in their posterior aspect, do not here use the knife, but let the finger do this by vigorous pressure. Thus the artery is not only secured from injury, but it remains undisturbed in its bed, and the popliteal space is not encroached on, or its anterior wall broken up. (Mr. R. G. H. Butcher, p. 86.)

Hip-Joint Disease.—If, in disease of the hip-joint, we can prevent the femur being forcibly dragged upwards by muscular spasm, we can generally manage more easily the inflammatory

action. The mode of preventing such upward pressure, is by a counteracting downward force, and the only method of applying this is by elastic extension. A splint expressly designed for this purpose will be found described at p. 83. (Mr. R. Barwell.)

Rupture of Adhesions in Stiff Joints.—*Sudden* action is the best means of overcoming any considerable amount of false anchylosis, particularly if the tissues be extensive and old. All scars of the skin should be loosened previous to sudden rupture of the adhesions. Myotomy is seldom needed. (Mr. R. Barwell p. 384.)

AFFECTIONS OF THE SKIN, ETC.

Anæmic Sphacelus of Fingers and Toes. —A singular case is related by Dr. Myrtle of Harrogate, of mortification of the little finger, and threatened similar state of the other fingers and the toes, arising chiefly, if not entirely from their bloodless condition : probably not from diseased arteries, but entirely owing to feebleness of the circulation, from want of power in the *vis a tergo*. There was a generally lowered state of vitality. He remarks that digitalis would have probably been most useful, from its power as a cardiac stimulant or tonic. (Dr. A. S. Myrtle, p. 159.)

Clay as a Dressing to Surfaces yielding Foul and Moist Discharges.—Clay, softened down in water, and freed from all gritty particles, is one of the most energetic, yet most innocent, of palliative applications to surfaces yielding foul and moist discharges. It should be laid layer by layer over the affected part, to the thickness of about a line, and renewed occasionally. The irritating secretion is rapidly absorbed by the clay, and the contact of air prevented. (Dr. Schreber, p. 159.)

Carbuncle.—A better plan than the crucial incision is the free application of potassa fusa to the centre of the carbuncle, until an eschar is fully formed. A third of the diameter of the indurated and inflamed mass being destroyed, a strong solution of iodine in collodion applied to the circumference of the mass, has an excellent effect in destroying the erysipelatous element in the disease. A dressing of resin ointment, mixed with an additional quantity of turpentine, or some camphorated spirits, should be used daily over the surface. (Mr. A. Prichard, p. 154.)

Eczema.—*Constitutional Treatment of.*—"There are few diseases more curable than even severe forms of eczema."

Constitutional treatment is always necessary. Purgatives are frequently required at the commencement, but they must be regarded merely in the light of adjuvants to other treatment. If the tongue is loaded, the appetite bad, the liver torpid, and the bowels costive, small doses of grey powder, in combination with rhubarb and quinine, may be administered with excellent effect. Sometimes occasional doses of calomel, alone or in combination with scammony, may be given with great advantage when there is much cutaneous inflammation. In persons or children who are scrofulous, or debilitated from insufficient or innutritious food, or from previous disease, cod-liver oil and iron are our sheet-anchors, all other treatment being omitted. Some of the most severe cases may be cured by the systematic administration for a couple of months of cod-liver oil and syrup of the iodide of iron. The oil should also be well rubbed into the body two or three times a day. Many cases are owing to poor breast milk, or from prolonged lactation. Another class of cases occurs in patients who are, with the exception of the eruption, in a good state of health, or even plethoric in appearance. In these cases, purgatives, very moderate and unstimulating diet, and abstinence from stimulants, are required. There are, then, three classes of remedies which may be relied upon, viz., the preparations of arsenic, and sulphur, and alkalies. Arsenic (Fowler's solution) is too often suspended or even abandoned at the very moment its curative powers are coming into play. In the case of children at the breast, the arsenic should be given to the mother. The most effectual way of procuring the full alterative effect of sulphur, is to prescribe a course of one of the natural mineral waters which contain sulphur, as those of Harrogate and Moffatt. Alkalies are of most use when there is a tendency to acidity of the stomach, and to the deposit of lithates in the urine, or to gout or rheumatism. Liquor potassæ, largely diluted with water, is, perhaps, the best alkaline preparation. (Dr. T. M'Call Anderson, p. 144.)

Local Treatment.—The first point in the treatment of every eczematous eruption, without exception, is to remove all the crusts which have formed. With the aid of a poultice, composed of bread crumbs and hot almond oil, this is a very easy matter. If the surface is *acutely inflamed*, or there are complaints of burning heat in the part, a very soothing application is a cold potato-starch poultice, a small quantity of a powder containing camphor, being previously sprinkled over the surface. Or emollient ointments may be employed, such as the simple or benzoated oxide of zinc ointment, cucumber oint-

ment (Neligan's), or cold cream. A mixture of powdered oxide of zinc and glycerine, in the proportion of half-an-ounce of the one to two ounces of the other, forms, likewise, a very soothing application. If the disease has become chronic, and there is *infiltration* of the skin, some form of potash must be applied. In slight cases, or where the rash is extensive, common soft soap may be used. A more elegant preparation is the liquor potassæ, which may be painted over the eruption, night and morning, with a large brush. It should be diluted considerably for mild cases. *Tarry preparations* are chiefly of use in the declining stages of eczema, where the infiltration and itching are moderated. The oil of cade is the most elegant preparation of tar,—it is only manufactured at Aix-la-Chapelle, and is the product of the dry distillation of the wood of the *Juniperus oxycedrus*. It is well, however, not to employ tar alone, but to combine it with a potash solution. In small local patches of eczema, the most successful plan is generally to blister the part with cantharides, or if so severe a remedy is not required, to apply, night and morning, a little tincture of iodine. (Dr. T. M'Call Anderson, *Medical Times and Gazette*, *July* 11, 1863, *p.* 33.)

Weak Alkaline Lotions.—In cases of pure uncomplicated eczema, a good plan of treatment is to keep the parts continually moist with lint saturated with a weak alkaline lotion (ʒss. carb. of soda to eight ounces of water). It is a *sine quâ non* that the lint should never be allowed to dry, otherwise it only increases the mischief. (Dr. J. Wallace, p. 151.)

Arsenic.—The most frequent cause of the failure of arsenic in the cure of the non-syphilitic forms of eczema. is the exhibition of the remedy in too large doses, and at intervals too distant. (*Lancet*, *August* 1, 1863, *p.* 124.)

Erysipelas of the Face.—Apply a solution of two parts of glycerine to one hundred parts of common collodion. It forms an excellent application in cases of erysipelas of the face. The addition of this small proportion of glycerine is sufficient to impart considerable suppleness to the collodion, and to prevent its dragging upon and cracking the delicate tissues to which it is applied. (Dr. W. A. Smith, p. 357.)

Psoriasis.—[The affection known as lepra is now classed with psoriasis under the name of psoriasis, there being no real difference between the two.—Eds.] In some cases, especially those in which the disease has reappeared without evident cause, a remedy of great use is the tincture of cantharides. It should be given at first in doses of four or five drops in water,

and gradually increased, if no serious symptoms arise, to twenty-five or thirty drops a day. A case of lepra of eighteen years' standing, was cured by its means. (M. Cazenave, p. 153.)

Skin Diseases.—*Gouty Diathesis.*—In all cases of skin disease, where there is reason to suspect the gouty diathesis, the administration of liquor potassæ in sufficient doses, well diluted with water, should never be omitted. Even when there is no reason to suspect this, potash, in many cases, acts with admirable effect. Not only is eczema rapidly benefitted by it, but the more obstinate forms of psoriasis yield as soon as the system begins to feel the debilitating effects of the remedy, the scales falling off in abundance. There is a point at which it is desirable to stop the potash, and to give a tonic, quinine or arsenic, according to circumstances, when the disease will rapidly improve. Tar ointment is not to be depended on alone, its use should be preceded by a course of internal medicine, whether potash or arsenic. (Dr. Ross, p. 139.)

Small-Pox.—*To Prevent Pitting after.*—Pitting after small-pox may almost infallibly be prevented by the following treatment :—About the fifth to the seventh day, when the small vesicles, somewhat depressed in the middle, surrounded by an inflamed margin, can be seen on the top of each pimple, and certainly before the contained matter assumes the appearance of pus, puncture each vesicle with a needle dipped in a solution of nitrate of silver. The solution should be of the strength of 30 grains to ℥j. of water, and the best needle is the flat sharp needle, commonly used for twisted sutures. This needle carries with it enough of the solution for each vesicle, and its shape favours a slight discharge as the instrument is withdrawn. In twenty-four hours the result is very apparent, the vesicle has dried up, no itching or unpleasantness remaining. (Dr. F. Bowen, p. 164.)

Mr. Higginbottom, of Nottingham, tried the plan followed on the Continent by Bretonneau and Velpeau, for preventing the pitting of small-pox, viz., first to puncture the vesicles, and then apply the solid stick of nitrate of silver to each pustule. This completely aborted the pustules, and prevented, of course, the consequent pitting. He subsequently found that the application of a concentrated solution all over the face effected the same object perfectly even when the pustules were not punctured. (Mr. J. Higginbottom, p. 165.)

Ulcers about the Toe-Nails.—That form of ulcer depending apparently upon pressure of the toe-nail upon the flesh, may be rapidly cured by inserting a little dry sesquichloride of

iron between the nail and the protruding flesh, and powdering the latter over with the same substance. A bandage should be applied over all. Next day the exuberant flesh will be found to have acquired the hardness of wood, suppuration speedily ceases, and the place is well after two or three applications. (Dr. Billon, p. 143.)

VENEREAL AFFECTIONS.

Syphilis.—*Calomel Fumigation.*—The best and simplest way of using mercurial fumigation is the following:—Procure a small basin which will stand heat, half fill with boiling water, and keep boiling by a spirit-lamp placed underneath. Over the basin place a circular plate, on which place the calomel (about half-a-drachm at the furthest). Let the patient sit on a cane-bottomed chair, with this apparatus beneath it, and enveloped in a kind of moleskin cloak, which should, of course, cover both chair and lamp. After sitting from ten to twenty minutes let him get into bed, still enveloped in the cloak, and remain quiet for two hours. On this principle I have treated nearly all my syphilitic patients, whether with indurated or non-indurated, pustular or epithelial chancre. I have never had *more* than a tenderness of the gums, however long the treatment has been persisted in. Many of the worst cases of secondary eruptions are rapidly cured by this plan. (Mr. A. Fleischmann, p. 222.)

AFFECTIONS OF THE EYE AND EAR.

Amaurosis produced by Tobacco.—It has been for a long time vaguely admitted that amaurosis is sometimes produced by the excessive use of tobacco, but no writer has more than loosely broached the idea. Mr. J. C. Wordsworth, of the London Ophthalmic Hospital, now states that within the last three years he has "seen a considerable number of cases of amaurosis, apparently produced by the influence of tobacco." Mr. Wordsworth's position is, however, assailed by one or two opponents of note. So the matter still remains a query. (p. 212.)

Atropia: its Actions and Uses.—Atropia, when applied locally, in solution (without spirit), is not a local paralyser as commonly supposed, but it appears rather to quicken the contraction of the parts to which it is applied. Applied directly to the smaller arteries atropia constricts them (Jones), and this effect many continue for many hours. It hence,

probably, causes relaxation of the tissue of the iris, by causing constriction of the arteries entering it. In an atropised eye the vision is clearer with distant than with near objects, this shows that the lens has receded and approached the retina, and is caused by a relaxation of the erectile structure of the ciliary processes, from the constricting action of the atropia. This theory of the turgescence or emptiness of the vessels of the iris, causing, respectively, the contraction or dilatation of the pupil, explains why we have wide pupil so frequently in atonic and exhausting diseases, in aneurism of the chest and neck, impeding the passage of blood into and through the carotid. Worms and diseases of the belly in children dilate the pupil and impair the sight, probably by reflex action through the sympathetic nerve, exciting the radial fibres of the iris, and contracting the cerebral arteries. (Dr. A. Fleming, p. 363.)

Conjunctivitis.—*Tannin.*—The astringents ordinarily in use, are, during the acute stages of conjunctivitis, inadmissible, in consequence of the irritation produced. Tannin is perfectly free from any irritating effects, yet it is one of the most powerful astringents known. (Dr. G. R. Sheraton, p. 186.)

Eczema of the External Auditory Passages.—The ear must first be carefully syringed to remove the exudation; when the walls of the canal instead of exuding, are scaly, a few drops of olive oil should be previously introduced. After all this effete matter is removed, paint the walls of the meatus with a solution of potassa fusa of the strength of ten grains to the ounce. If the action be very severe it must be checked at once by the injection of tepid water. When the drum participates in the disease, inject a solution three times weaker than the above, night and morning. The rule should be, the weaker the application the oftener it should be applied—the stronger the more seldom. If a stronger solution be used to the walls of the meatus, care must be taken that the camel's-hair brush is not too wet with it. (Dr. T. M'Call Anderson, p. 215.)

Eye.—*Singular Effects of the Calabar Bean on the Ciliary Muscle and Circular Fibres of.*—The Calabar bean, as its name indicates, is procured from west Africa. It is found to have the power of causing contraction of the circular fibres of the iris and of the ciliary muscle of the eye. It is best first to prepare an extract, and from this to make solutions of various strengths (of the strongest solution one minim should correspond to four grains of the bean). A case of paralysis of the circular fibres of the iris and of the ciliary muscle of the right eye, the left being perfectly normal, has afforded opportunity

for fully testing this singular action. Not only was the pupil of the healthy eye rapidly contracted, but even the paralysed pupil, which before the application measured three and a half lines, was contracted to two-thirds of a line (the size of a pin's head) within half an hour after the application of the solution. Of course myopia was produced in both eyes. The effect of the drug gradually passed off, ceasing entirely in the paralysed eye in five hours, and in the healthy eye not until after six days. The bean may be procured of Bell and Co. of London. (Dr. Soelberg Wells, p. 195.)

The cases in which we may expect this remedy to produce the most beneficial results are those in which paralysis of the ciliary muscle occurs as a consequence of long continued debilitating disease. Cases of this kind occasionally follow attacks of typhus or other fevers. The dimness of vision which forms a sequel of diphtheria appears to be due to this cause. In cases of ulceration of the margin of the cornea, leading to perforation, or even when prolapse of the iris has just occurred, the contraction of the pupil induced by this agent might prove serviceable by drawing the iris away from the circumference. In cases of retinitis with photophobia it may be advantageously employed to diminish, by contraction of the pupil, the access of light to the retina, and this more especially when the pupil has been dilated for the purpose of ophthalmic examination. (Dr. A. Robertson, p. 202.)

Forceps to Fix the Eye during an Operation.—If the eye is held by a single point of conjunctiva, the eye-ball may have two different kinds of motion. There is a considerable degree of motion from side to side, and also rotation round the point of conjunctiva as a centre. Both of these objections are remedied by holding the conjunctiva at *two points, one on either side of the globe.* This can be accomplished readily by a pair of forceps with two pair of points instead of one, and distant from one another $\frac{3}{8}$ths of an inch. (Mr. J. F. Streatfeild, p. 173.)

Obstructed Lachrymal Duct.—The mere occasional probing of a strictured duct is not sufficient. It is, moreover, so tedious and so very disagreeable, that patients rebel against it. When there is really that degree of structural change which unequivocally calls for instrumental treatment, the wearing of a style is the less irksome, the more beneficial, and the quicker plan. It is a great modern improvement to introduce the style through the canaliculal entrance into the lachrymal sac, instead of the old plan through the skin on the face. The duct should be first explored with a tapering steel sound, and then with a small silver wire; should

there be much stricture, and some difficulty in reaching the floor of the nose, do not withdraw the wire, but cut off the upper part and turn the end down on the eyelid with pliers in the form of a little hook. After a few days a larger style may be introduced. The styles should, at the upper end, be curved into a hook, which is intended to rest just over the eyelid; they should be kept of different lengths, for in each application the foot should reach the palatine process of the superior maxillary bone forming the floor of the nose. There is then no risk of the style slipping down, nor of the upper end producing irritation from pressure. There is great liability, in passing a style, to penetrate the lachrymal bone rather than in line of the duct. This causes failure, and must be avoided by an accurate knowledge of the anatomy of the parts. If the stricture prove so tight that it cannot be penetrated by the probe or the style, it must be divided by the style knife, which must be pressed down until resistance is overcome. (Mr. H. Walton, p. 184.)

Pannus, and other Corneal Lesions.—*Syndectomy.*—In cases of vascular and fleshy cornea, not yielding to other means, the operation of removal of a large zone of conjunctiva and sub-conjunctival tissue may be tried. The sub-conjunctival tissue must be carefully dissected off so as to expose the surface of the sclera. No trace of cellular tissue or of blood-vessels should be left. A pair of scissors, curved on the flat, one of the rings of which has a contrivance for holding a sponge, is the best instrument for the purpose. The vessels on the cornea should be freely scarified, and their ends, if projecting, cut off with scissors. After the bleeding has somewhat subsided, the exposed sclera and ulcerating portions of the cornea should be touched with a strong solution of nitrate of silver. Much irritation, but no inflammation follows the operation. The blood-vessels on the cornea speedily atrophy, and the infiltrated blood and lymph become absorbed, and a transparent cornea appears three or four days after the operation. A thick plastic material covers the exposed sclera. In from one to two months all trace of a loss of the conjunctiva has disappeared. (Dr. C. Bader, p. 177.)

Syndectomy versus Inoculation.—In a case in which both corneæ were completely vascular and villous, no portion of clear healthy cornea remaining, one eye was inoculated with pus from the eye of a child suffering from severe purulent ophthalmia. Severe inflammation, followed by a copious discharge of pus, ensued. The action induced was allowed to run its course. Some weeks after this the report states,

"The granulations of the lids have disappeared, and a smooth surface is seen. The cornea is bright and transparent." In the other eye syndectomy (or peritomy) was performed, the zone of conjunctiva removed being $\frac{1}{8}$th of an inch in width. The results were satisfactory, but not so much so as those of inoculation in the other eye. The operator, Mr. Lawson, concludes that inoculation by purulent matter is a far more efficient proceeding than syndectomy, and equally safe. (Mr. G. Lawson, p. 175.)

Prolapsed Iris.—*Calabar Bean.*—When there is prolapsus of the iris owing to a wound *near the margin of the cornea*, the application of an extract or strong solution of Calabar bean will prove of service, by inducing contraction of the pupil, and so withdrawing the prolapsed part. (Mr. T. Nunneley, p. 203.)

Purulent Ophthalmia.—At the very commencement of the the case it is sufficient to apply a cold lotion to the eyelids, and sponge with tepid water. The following ointment should be applied to the edges of the lids with a brush, to prevent them sticking together: citrine ointment, one drachm; olive oil, four drachms; lard to one ounce and a half. When the purulent secretion is established, an alum lotion (four grains to the ounce) should be applied beneath the lids *every hour*. It is, however, an excellent plan to have sticks of nitrate of silver, melted with certain proportions of nitrate of potash to diminish the cauterizing effects. These dilute caustic points should be wiped over the palpebral conjunctiva, the lid being everted for the purpose. A little solution of common salt applied immediately afterwards will neutralize any excess of nitrate of silver. In severe cases this application should be made once or twice a day for a time. The use of stronger nitrate of silver is to be condemned. (Mr. E. Hart, p. 189.)

If the weak solutions of nitrate of silver, or alum, have failed to arrest the case at the commencement; or it has been neglected so that the lids are red, swollen, and shining, from the tenseness, and the child hot, fretful, and restless, the best plan is to apply a leech to each upper lid, and administer a grain of calomel at once. Fomentation of the lid should be continued some time, to encourage bleeding. The swelling will thus be soon reduced so that the cornea may be examined. (Mr. J. C. Wordsworth, p. 188.)

Staphyloma.—*Abscission.*—In reducing a staphyloma, the aim and object is to form a dense, fibrous, elastic, moveable bulb, filled with fluid, flattened upon its anterior surface, and of such a size as admits the ready adjustment of an artificial eye, and its free movement. The patient being placed under

the influence of chloroform, and the staphyloma freely exposed by a wire speculum, pass through the mass, equidistant, a series of four or five small needles, having a semicircular curve, and at such points as the lines of incision are intended to traverse. By this plan, besides other advantages, the sudden escape of the lens and vitreous humour is prevented, after the anterior part of the staphyloma has been removed. The anterior part of the staphyloma must now be removed by a pair of small probe-pointed scissors; an elliptical piece should be removed, just within the points where the needles have entered and emerged. The needles, armed with fine black silk, are then to be drawn through each in its turn, and the sutures carefully tied so as to approximate as closely as possible the divided edges of the sclerotic and conjunctiva. The operation is now finished, wet lint must be applied to keep the parts cool. The sutures should be removed in a few weeks, if they do not come away spontaneously. (Mr. G. Critchett, p. 166.)

Strabismus.—The following is a brief description of the operation for strabismus as performed at Moorfields:—The lids are kept apart by the ordinary wire speculum. The surgeon then makes a small opening in the conjunctiva with scissors over the lower edge of the insertion of the rectus tendon, taking hold of the membrane, and often of the deep fascia at the same time, with the forceps, which, if the eye be turned inwards, may be slided (closed) along the surface from the edge of the cornea till they reach the proper spot for the opening; thus the eye need not be held by an assistant. The fascia being opened, the lower edge of the tendon is exposed *close to its insertion*. If the fascia has not been opened at the first snip, it is in its turn seized by the forceps at the same point and divided, without interference with any other structure; the object being simply to divide the tendon on the ocular side of the hook *at its insertion*. The blunt hook is now passed through the aperture in the subconjunctival fascia, and behind the tendon, which it renders tense by being made to draw on it slightly forwards and outwards. The next step is the introduction of the scissors. Mr. Bowman insists on the propriety of carefully introducing the points of the scissors, not much separated—one along the hook behind the tendon, the other in front of the tendon, and between it and the conjunctiva, and of dividing the tendon by *successive snips* from the lower to the upper edge. If the tendon is divided by one cut the operation is more roughly executed, for, as the blades have to be opened more widely, the opening in the conjunctiva and

fascia must be larger, vessels of a larger size may be divided, and the tendon may be pushed off the hook before the points of the scissors: if this happen, of course the hook must be reintroduced. The surgeon completes the operation by making a small counter-puncture, by bulging the conjunctiva on the end of the hook in the situation of the upper border of the tendon after its division, and by then snipping it with the scissors; the object being to allow any of the effused blood immediately to escape, instead of diffusing itself over the sclerotic. The subsequent ecchymosis then never need extend beyond the seat of the operation, and should disappear within a few days. It is highly important to carefully ascertain the comparative strength of the external and internal recti muscles in both eyes, as, according to the relative strength of these, Mr. Bowman determines upon the necessity of operating on one or both eyes. (Mr. G. Lawson, p. 182.)

Strabismus, New Operation for.—Dr. Armstrong Todd has for several years operated for strabismus by a new method. He makes a horizontal incision in the conjunctiva, high up under the upper lid, and then a sub-conjunctival division of the tendon. By this means the upper lid completely covers the incision in the conjunctiva, and excludes the air from the divided extremities of the tendon. The after-appearance is much better by this plan, than when the operation is done from below, under the lower lid. The following is the mode of proceeding:—Introduce the wire speculum, seize with a fine claw forceps, and draw downwards the conjunctiva of the upper and inner angle as it reflects from the posterior surface of the lid upon the eye-ball. Then, with a curved scissors, make a horizontal incision about a quarter of an inch or three-eighths long, and with another fine claw forceps draw out the areolar tissue and sub-conjunctival membrane through the first opening, the forceps still holding the conjunctiva, which may now be released, and the scissors again taken to divide these tissues down to the sclerotic; a small curved director is then introduced and directed at first towards the back of the eye and then drawn forwards and downwards so as to pass between the muscle and the eye-ball. This is readily accomplished, and the tendon can be felt and sometimes seen lying upon the director. A small curved bistoury is then passed down the groove, and with the act of withdrawing is made to divide the tendon, the point being seen as it passes upwards behind the conjunctiva, which must be carefully preserved from being cut; the director is then removed with its point pressing against the back of the conjunctiva, and will show if the muscle be completely divided. (Dr. A. Todd, p. 170.)

Ulceration of the Cornea.—*Iridectomy.*—In cases of rapid destructive ulceration of the cornea, where the eye will soon be irretrievably lost, perform iridectomy at once. A case is related in which all pain ceased three hours after the operation, and the man was soon well. The pain before the operation had been acute, and the ulceration progressing most rapidly. The performance of such an operation, which must, to some extent impair the eye, we can, however, only consider justifiable in extreme cases. (Mr. R. B. Carter, p. 192.)

MIDWIFERY AND THE DISEASES OF WOMEN, ETC.

Embolia in Lying-in Women.—At a period more or less closely approaching delivery, a woman may be seized with fainting, *intense* pain in one or more limbs, followed by swelling, arrest of pulsation, loss of heat, gangrene, and perhaps death. After death clots are found in the main arteries of the limbs affected. In another class of cases we witness sudden faintness, irregular action of the heart, distressed breathing, quickly-increasing collapse, and rapid death. In these cases it is found that the pulmonic circulation is almost exclusively concerned, and clot-obstructions are discovered in the right heart and pulmonary arteries. The condition of the blood in the puerperal state is favourable to the production of clots in the uterine veins, and veins of the lower extremities. But imperfect contraction of the uterus, and the formation of putrilage in the uterine cavity are often the immediate antecedent conditions of puerperal thrombosis. It has been noticed that in many cases some mental emotion, or sudden exertion, has seemed to be the exciting cause of the affection. (Dr. R. Barnes, p. 273).

Is it a Boy or a Girl?—Queen bees lay female eggs first and male eggs afterwards. In the human female conception in the first half of the time between menstrual periods produces female offspring, and male in the latter. When a female has gone beyond the time she calculated upon, it will generally turn out to be a boy. (Dr. F. J. W. Packman, p. 227.)

Obstetric Forceps.—It is a good plan to place a rack and spring on the handle of one of the blades, that of the other being tapered so as to be received into the furrows made for it. By this means the pressure on the child's head may be increased or diminished at will, and all necessity for tying the

blades with tape to prevent them sliding, during the absence of a pain, is obviated. (Dr. W. Gayton, p. 251.)

Ovariotomy.—Before proceeding to any operation, the surgeon must be satisfied, by careful and repeated examination, that the tumour is ovarian, and, if possible, that it is not cancerous. This is, however, sometimes impracticable. At the present time surgeons rarely find an obstacle to the completion of the operation in the adhesions about the ovarian sac, but either break through them with the écraseur or the hand, or divide them with a knife or scissors after tying them, if found vascular, with silver wire. The details of the operation will be found at p. 299. (Mr. I. B. Brown, p. 298.)

Placenta Prævia.—Supposing the patient is pulseless and much exhausted from the loss of blood, the proper plan is *to remove the placenta at once, and then to plug the vagina.* Then give a large dose of laudanum (forty minims) in brandy. Support in every way the temperature of the surface, and if the action of the uterus be feeble, promote it by the electric current or ergot of rye. It is very doubtful whether any advantage is gained by removing the child, as the patient may be unable to bear the shock which it produces, partially owing to the pressure being taken off the great venous trunks of the abdomen, which are only imperfectly filled with blood. The plugging of the vagina is advised as a precautionary measure. (Dr. E. W. Murphy, p. 246.)

[Dr. Murphy does not here mention Dr. Barnes's valuable suggestion of separating the placenta from the cervical zone merely of the uterus, which is preferable, in many cases, to its total separation.—Eds.]

Plugging the Vagina.—The linen or other substances of which the plug should be made, ought to be saturated with some astringent solution. When this is done, their introduction becomes extremely difficult and painful, owing to the corrugation of the parts produced. By using a common glass speculum, all trouble is at once removed, as the vagina can be packed without any difficulty to the practitioner, or suffering to the patient. By means of the speculum the os, in cases of abortion, may be plugged with a piece of sponge, which is very difficult to accomplish without it. (Dr. E. P. Bennett, p. 258.)

Premature Labour.—Premature labour may, with great facility and safety, be induced by the application of nitrate

of silver to the interior of the cervix, just within the os. No unpleasant results whatever ensue. (Prof. Giordano, p. 234.)

Puerperal Convulsions.—*Chloroform.*—The treatment of puerperal convulsions by venesection arises from erroneous views of the pathology of the affection. Anti-spasmodics, the most powerful of which is chloroform, are more appropriate. Chloroform should be given at once, and continued until complete anæsthesia is produced, and the delivery then expedited as much as possible with safety to the mother and child. Bleeding has been used, because it was thought that convulsions depend essentially on an increased determination of blood to the brain, whereas, neither the proximate nor the remote cause is to be found in a hyperæmic condition of the brain. If, however, the cerebral veins, as an *effect* of the convulsions, become so distended with dark blood that there is a tendency to apoplexy, then blood-letting is necessary. (Dr. J. M'Nab, p. 236.)

Secale Cornutum.—The secale is very liable to be attacked by an acarus, particularly when damp. It should be procured in substance, whole; it should then be carefully dried and put into a well-stoppered bottle, with a piece of camphor. The camphor seems to have the effect of preserving it from the acarus. A new parcel of the drug should never be placed in the bottle along with the old. About two drachms of the drug should be boiled in eight ounces of water for about five minutes, and given in three or four doses, with twenty minutes interval, and as hot as possible. If these precautions are attended to disappointment will rarely follow. (Dr. J. W. Beck, p. 244.)

Sore Nipples.—Having carefully dried the parts with a soft muslin handkerchief, apply a solution of gutta-percha in chloroform (℥j. of gutta-percha tissue to ℥iij chloroform), so as to completely surround the nipple, and cover all abrasions. Three or four coatings should be applied. The film formed is firm, elastic, and harmless, and should it rub off is very easily replaced. During the act of suction (only) a box-wood shield with a calf's teat may be used, until all abrasions are perfectly healed. (Mr. W. H. Castle, p. 272.)

Uterine Displacements.—The stem of any pessary intended for insertion into the uterine cavity, should never be so long as the uterine cavity itself, otherwise the resulting pressure on the fundus uteri causes inflammation. The instrument

used by Dr. Craily Hewitt for maintaining a displaced uterus *in situ*, is a globular air pessary, surmounted by a stem of ivory. It maintains its position when distended with air. Dr. Routh's instrument consists of a coiled wire bell-spring, covered with caoutchouc, and having a small gutta-percha disc, about two inches from its upper end. Upon the disc, with the coiled wire within the organ, the uterus rests, while the lower end is secured by tapes or a napkin from ejection. The spring maintains the organ *in situ*, while it allows full movement of the uterus with the movements of the body. Dr. Barnes' instrument is a small cup, which supports the uterine neck; this cup is supported on a curved stem, so small as not in any way to disturb the vagina. The end of the stem is suspended by elastic bands to an abdominal belt. This instrument is intended only for the treatment of simple prolapsus, the other two for prolapsus with displacement. Dr. Barnes remarks, that there are two forms of prolapsus; one arising from absorption of fat and other tissues, which occurs in the decline of life, so that the uterus, wanting support, falls down into the pelvis. It is to this, which is purely a mechanical disorder, that mechanical support is most applicable. The second form occurs during the child-bearing period, and depends on congestion and enlargement of the of the organ. Rest, and consequent removal of congestion, are of most use here, though occasionally supports may be required as a temporary thing, as by their use the congestion which necessitated them is often relieved. The use of such instruments must never banish from our minds the necessity of proper constitutional treatment. (Dr. G. Hewitt, Dr. Routh, Dr. Barnes, pp. 260, 262)

Uterine Pessaries.—A form of pessary is thus constructed:—A circular disc of metal, perforated centrally, is surmounted by a short tube of the same material, closed at the free end. This stem is passed into the uterine cavity, the os resting on the upper surface of the metal disc. Another piece of the instrument is now passed into the interior of the first; this second piece is lengthened in form, and adapted to the curve of the vagina, and is itself fixed externally to a wire frame which is accurately adapted to the abdominal walls. *Dr. Simpson's* pessary is almost precisely similar to this, except that it is in one piece. It renders the uterus quite immovable. (Dr. D. E. Wilkie, p. 307.)

Medicated Uterine Pessaries.—The butter obtained from the Theobroma Cacao nut possesses most valuable qualities as a material for medicated pessaries. Though very firm, it

has the property of becoming fluid at a low temperature. There are few uterine diseases in which the use of medicated pessaries may not be advantageously used. They are more especially valuable in acute and chronic inflammation of the cervix uteri; in internal metritis, with exfoliation of the lining membrane of the uterus; in slight prolapsus or procidentia; in cancer; in all varieties of ovaritis, as well as in many affections of the female bladder. They shield the diseased and irritable surface from contact with the vaginal walls, and such drugs as opium, belladonna, and conium, are useful in relieving pain. In some diseases of the uterine cavity, attended with copious muco-purulent discharges, or with hemorrhage, the greatest benefit may be obtained from the local use of astringents. Once or twice a week, a pessary made of tannin and cacao butter, about two and a half inches long, and of the size of an ordinary stick of nitrate of silver, may be introduced up the canal of the uterus, and left there. Other substances, as alum, sulphate of zinc, dried sulphate of iron, &c., may be employed in the same manner. When sanguineous or purulent discharges have long been present, the os and cervical canal will always be found sufficiently patulous to permit of the introduction of these astringent rods. (Dr. T. H. Tanner, p. 310.)

Ulceration of the Os and Cervix Uteri.—*The Action of Nitrate of Silver locally applied.*—Nitrate of silver differs from potassa fusa in that its action is strictly limited. It is very active and yet manageable, and the surface left is healthy and heals kindly. These properties render it especially applicable for the treatment of most of the ulcerative diseases of the os and cervix uteri. To produce its full effect it should be used most firmly, and with a certain degree of friction and rotation. By this means it penetrates below the surface, and an eschar of sufficient depth can be readily obtained. But in its ordinary form, nitrate of silver is wholly unfit for this kind of service, in consequence of its great brittleness. All mixtures with other salts, with the design of obviating this brittleness, weaken the nitrate, and render it unfit for use as an escharotic. A good plan to produce a firm and tenacious caustic cylinder, is to mix up with the fused material a small quantity of long asbestos fibres. A better plan even than this, is to have the sticks cast with a small central perforation extending the whole length of the cylinder. This is very easily accomplished, by passing a polished steel pin through a hole in the upper and lower halves of the mould. A caustic holder is required especially adapted for these cylinders. It consists of a small socket of silver, bisected and carried on

the halves of a slender metallic support, grooved internally, and externally cut to a spiral thread, on which a nut works to and fro. The cylinder of caustic drops about one eighth of an inch into this socket, and a platinum pin, exactly like a common pin, is passed through it and between the halves of the stem. The little nut is now worked upwards, and the pin being secured by its pressure, a perfectly firm and unbreakable cylinder of caustic is held by the instrument. (Mr. R. Ellis, p. 312.)

Uterine Polypi.—*New Method of Extirpating.*—Occasionally very large uterine fibrous polypi are met with, so fixed in the pelvis that neither by finger nor instrument is it possible to reach the pedicle. In such cases the proper plan is to seize the point of the polypus by the vulsellum, draw it down, and then make free and deep transverse cuts in the body of the tumour, by a pair of long and sharp-pointed Cooper's scissors. It is found that when the capsule and the subjacent adherent fibrous layers are divided, the fibres of the body of the polypus separate from each other in large bundles when traction is applied, so that the polypus may be so thinned that it becomes easy to reach the peduncle. (Prof. Simon, p. 291.)

Uterus.—*State of the Internal Surface of, after Delivery.*—It was formerly supposed, and still is, by many, that after delivery or miscarriage the muscular tissue of the uterus is denuded of mucous membrane, and left bare. This is quite erroneous. At no time, during pregnancy or after it, is the decidua thrown off in mass, or the muscular tissue denuded. At whatever time miscarriage takes place, the separated decidua always leaves a layer covering the internal surface of the uterus. After delivery, the persistent layer of mucous membrane is found, as in early pregnancy, to be thicker at the site of the insertion of the placenta, than elsewhere. (Dr. J. Matthews Duncan, p. 287.)

MISCELLANEA.

Aconitine.—MM. Liégeois and Hottot describe the following process for preparing aconitine. It is believed to be of English origin, and will, with a slight difference, be incorporated in the forthcoming *British Pharmacopœia*. The bruised root of *Aconitum napellus* is digested for eight days in alcohol slightly acidulated with sulphuric acid. The

alcoholic solution is then pressed out, and the alcohol distilled off. A small quantity of green oil and an aqueous extract are thus obtained. The green oil is separated, and the extract further evaporated to the consistence of a syrup. It is now dissolved in water, and neutralised with magnesia, and then shaken up with ether. The ethereal solution on evaporation yields the rough aconitine. This is again dissolved in water acidulated with sulphuric acid, and decolorised by means of animal charcoal. Ammonia is then added to precipitate the aconitine, and the mixture boiled, after which the alkaloid is collected on a filter and dried. This part of the process is repeated once, or twice if necessary, in order to obtain the alkaloid with as little colour as possible. It is eventually precipitated with a very slight excess of ammonia, and dried at a low temperature. Aconitine so obtained is completely soluble in ether, and possesses remarkable activity. The alkaloid received from the Continent, and commonly sold in England, is of very inferior quality. A correspondent administered three grains to a dog without producing the smallest discomfort to the animal. Two *milligrammes*, or little more than three-hundreths of a grain, prepared by MM. Liégeois and Hottot by the above process, killed a frog in four minutes, while it required a grain and a half of the most active that could be found in commerce to produce the same effect. The *British Pharmacopœia* is said to make considerable use of alkaloids; and as, in consequence of their greater cheapness, most of these will be imported from abroad, it will be incumbent on pharmaceutists to test their activity by experiments on living animals, or to procure the alkaloids from reliable English sources. (*British Medical Journal*, *Nov.* 21, 1863, *p.* 549.)

Calabar Bean.—The following is the formula for the preparation of the tincture of Calabar bean. Take of the kernel, in the form of fine powder, ℥i.; rectified spirit ℥ij. Place the kernel and one ounce of the spirit in a carefully-covered vessel, and allow it to remain for forty-eight hours. Pack in a percolator, pour in what spirit may be left in the vessel, and add the remaining ounce of spirit. When this has ceased to escape from the percolator, pass as much more spirit through as may be required to obtain two ounces of a golden yellow tincture. Five minims of this tincture is a good dose with which to commence the administration. This appears to possess the activity of three grains of the kernel. The dose may be trebled without pushing the physiological action to any extreme. By evaporation in a vapour bath an extract may be obtained. Experiments so far seem to point to the

conclusion that the drug will prove of service in all hyperæsthetic conditions of the spinal cord, especially in such cases as tetanus, centric or excentric, and some cases of epilepsy. There is also a decidedly sedative action on the heart, hence a feeble pulse is always a contra-indication to its administration. When pretty large doses are given a strong rapid hard pulse is soon softened. In the treatment of neuralgic affections, with nervine irritation, it is likely to prove of service. (Dr. T. R. Fraser, p. 199.)

Carbolic Acid.—*Therapeutic Uses of.*—Carbolic acid is a caustic when undiluted, when diluted it is astringent and disinfectant. A solution in glycerine is very useful in relaxation of the mucous surfaces; it should be applied by means of a brush or sponge. Its use is indicated in polypi of the nostrils, in ozœna, and in all putrid discharges from the mouth, throat, nostrils, ears, rectum, and vagina. It is a valuable topical application in diphtheria, and to carbuncle and ill-conditioned sores, being used in different degrees of solution, according to the character of the sore. It may be applied to fistulæ not communicating with the rectum by means of the little wax tapers used in lighting gas. In hemorrhoids the action of carbolic acid is mainly to corrugate, and therefore to obliterate, the sac of the pile; it also coagulates the contents. When applied to fœtid ill-conditioned ulcers, a solution of one part of acid in forty parts of water should be used. It soon induces a purulent instead of a sanious discharge. It removes all disagreeable putrescent smell from gangrenous sores. When it is wished to employ it in a less diluted state than the aqueous solution, and yet not in its full strength as a caustic, the following solution should be used:—two drachms of carbolic acid in one drachm of liquor potassæ and half a pint of water. (Mr. Turner, p. 367.)

Chloroform.—Out of fifty-one cases of death from chloroform thirty-eight declared their danger by sudden stoppage of the pulse; twenty-five of these showed in addition, as a chief sign, pallor of the countenance. In two deaths the symptoms have occurred thus—sudden vomiting, instant cessation of the pulse, (food had been taken just before). In six cases congestion of the face was the most marked symptom. In eight cases cessation of the breathing was the most noticeable symptom. What is to be done in cases of threatened death? There is only one perfect stimulus to the failing heart, the stimulus of ærated blood, and the only means of producing this is by the excitation of respiration. Artificial respiration may be practised by one of the two postural methods—that

of Dr. Silvester, or that of Marshall Hall; or by mouth to mouth insufflation, or by galvanism of the phrenic nerve. Before any means for artificial respiration are adopted, the tongue should be well drawn forwards. A great error would be committed if a patient *in extremis* were wheeled round to an open window. Dr. Richardson has well established the value of warmth as an adjunct to the respiratory efforts. (Dr. Sansom, *Medical Times and Gazette, Nov.* 7, 1863, p. 481.)

Climate.—*Egypt.*—The grand advantage of the Egyptian climate in winter is its daily serenity and sunshine; however strongly the wind may blow, a sheltered nook, after 9 or 10 a.m., will always be a sunny one. To those therefore with susceptible air-passages, it is a matter of no little importance to be aware of this circumstance, and able at the same time to have certain simple measures at their own command, which will modify, in a great degree, the deleterious influence of the weather. There can be little doubt that the climate of Upper Egypt, Nubia, and the Desert, from their superior dryness, are better suited for the generality of tubercular patients than that of the Delta and the cultivated tracts of the low country. Much, however, depends on the morbid changes which have taken place, or are in course. But Nubia appears to me the climate, of all in the Nile Valley, between Alexandria and the second cataract, that is most likely to agree with phthisical patients, to many of whom the sharp and bracing air of the desert is too strong. (Dr. A. L. Adams, p. 328.)

Sudden Change of Climate.—When invalids who are leaving England for the winter push rapidly to their destination, the liver and skin, which were already in England relieved from the stimulus of our mild summer heat, are called violently and suddenly into action. The result is diarrhœa, bilious attacks, skin irritation, boils, &c. Diarrhœa is so common that few Northeners escape, and it is universally and erroneously attributed to change of food, to wine, and to such influences. The transition should not be so rapid, several weeks being spent on the journey. An excellent station is Fontainebleau, thirty miles south of Paris. England should be left about the end of September, but the winter destination is not ready for invalids until the end of October. (Dr. J. Henry Bennet, p. 374.)

Corrosive Sublimate Poisoning.—*Gold Dust and Iron Filings.*—A solution of corrosive sublimate is at once decomposed by a mixed powder of gold dust and iron filings, the mercury

being deposited on the gold and the chlorine on the iron. In cases of poisoning by corrosive sublimate, the stomach having been emptied as thoroughly as possible, it is well to administer this powder. Sufficient gold may be readily procured from two books of gold-leaf, and fresh iron filings may be very readily made in almost any house in a few minutes. (Dr. C. Johnson, p. 347.)

Iodine as a Deodoriser. — The vapour of iodine has the power of rapidly and completely destroying any organic matter present in the air of an apartment, and rendering it again fresh and agreeable to the smell. The iodine may be placed in the ornamental vases on the mantel shelf of a room; but in extreme cases it should be placed on a plate and volatilised by the heat of a candle. This discovery is likely to prove most valuable, especially in small-pox. In rooms occupied by small-pox patients, organic matters float largely in the air, rendering it most offensive. When the air is greatly charged with organic matters the smell of the iodine is for a long time imperceptible. This plan is quite as effectual as the liberation of free ozone, it is indeed in principle the same. (Dr. B. W. Richardson, p. 356.)

Liquor Bismuthi.—Mr. Schacht, of Clifton, has succeeded in preparing a solution of bismuth which is uniform in composition, stable, miscible with water or other fluids without precipitation, and efficient in small doses. The solution is quite transparent, with a slight alkaline reaction, and although it only contains eight grains to the ounce of solution, a fluid drachm is a full dose. We are not told how the solution is effected, nor whether without decomposition of the trisnitrate of bismuth, and the results in practice remain to be seen. It has, however, been highly recommended by Dr. S. Martyn, Senior Physician to the Bristol General Hospital. (p. 342.)

Nitrate of Silver.—The new preparation "lunar caustic points, perfectly tough" is worthless as an application in surgical cases. It is not nearly so soluble as the old brittle stick of nitrate of silver, and has scarcely any power in checking and subduing inflammation, and is useless in the cure of wounds. From the experience I have had daily of the use of the nitrate of silver for so many years, I am convinced that no remedy of equal power in subduing external inflammation and healing wounds has been discovered, if properly applied, although many remedies have been recommended in lieu of it. (Mr. J. Higginbottom, p. 354.)

Opium Poisoning.—If the patient be seen early, sulphate of zinc, followed by draughts of warm water when it begins to act, is the most appropriate emetic. A scruple to a drachm should be given according to the case. It is less irritant than most other emetics, and acts also as an astringent, thereby hindering further absorption. An interval of fifteen or twenty minutes usually intervenes before emesis is produced. It should at first be given as little diluted with water as possible. In an emergency, salt and water, or mustard and water, may be substituted, and their operation accelerated by irritating the fauces with a feather. When a larger quantity has been taken, or a greater interval than an hour has elapsed, the stomach becomes insensible to the action of emetics, and mechanical means for removing the poison should at once be had recourse to. (Dr. W. R. Hatrick, p. 345.)

Galvanism.—A most effectual manner of arousing the energies of a patient becoming comatose from opium, is the use of galvanism. In a child of seven months, it was found that its application across the cheeks aroused it most. Cold affusion had lost its power. (Dr. J. W. Ogle, p. 352.)

Permanganates as Antiseptic Agents.—There are conditions in which the internal and external use of the permanganate of potash affords results far transcending those of any other agent. While bark and the mineral acids are more potent for good in the blood putrescence of fever, carbuncular disease, blood scurvy, and pulmonic gangrene, the permanganates are infinitely more efficacious when the surfaces are involved; as in cancers, and foul ulcers of the skin, and putrid state of the mucous membranes of the mouth, nose, throat, stomach, and intestines, and vagina, and uterus. While the chlorides, creosote, and carbolic acid, &c., displace one bad odour, they themselves bring others scarcely, to some persons, less offensive; but the permanganate simply deodorises and freshens. The only odour perceptible is that pleasing impression which arises from the smell of recently bleached clean linen. Theoretically speaking, we have here a simple hyperoxygenation and dispersion of the offending elements by the powers of ozone; but, be the precise nature of the action what it may, the practical results cannot be doubted, for they are invariable and instantaneous; so that, against the putrefactive horrors of cancer, mercurial salivation, necrosis, and certain affections of the liver, intestines, and uterus, no agent can approach the freshening influence of the permanganate of potassa, a preparation as beautiful in appearance and as mild in taste, as it is certain and beneficial in its action. (Dr. D. Nelson, p. 376.)

Phenic Acid.—*Action on the Human Skin.* Immediately after the application of a thin coating of the pure acid, a sharp smarting is felt, which lasts about an hour. The epidermis becomes wrinkled, and in a short time the formation of a white body may be remarked wherever the acid has touched. This white coloration results from the action of the acid on albumen; it disappears by degrees, and is replaced by some congestion, which lasts about twenty days. This congestion presents all the characters of an intense inflammation, being attended with redness, heat, and swelling. If a small piece of the epidermis (which appears raised as in a blister) be stripped off no serum escapes. The epidermis becomes detached by degrees, and when the exfoliation is complete a brown spot remains, which testifies for a long time to the energetic action of the acid. After a number of experiments on his own arms, and the arms of his friends, M. Lemaire states that the smarting never lasts longer than an hour. The redness of the skin endures about twenty days, but the inflammation never extends beyond the part to which the acid has been applied. *Action on the Mucous Membrane.* The action of the pure acid on the mucous membrane is, of course, analogous to its action on the skin; acute smarting, shrivelling up of the epithelium, and a milky coloration being observed. The smarting does not last so long as on the skin, especially on such membranes as produce an abundant secretion; and the epithelium quickly returns to its normal condition. *Action on the Respiratory Organs.* From experiments on mice and horses, the author concludes that the higher animals may breathe the diluted vapour of the acid for a long time without discomfort or danger. *(British Medical Journal, Nov.* 21, 1863, *p.* 552.)

Quinine.—*Adulteration of by Cinchonine.*—To detect the adulteration of quinine by cinchonine is very easy:—Dissolve about a grain of the salt to be examined in two drachms of water, with the addition of three drops of dilute sulphuric acid, in an ounce phial. Then drop into the solution five or six drops of solution of ammonia. A precipitate will form whichever alkaloid is present. Now add two drachms of sulphuric ether, and shake the phial well. If the precipitate dissolves it is *quinine;* if it remains undissolved it is *cinchonine.* (p. 343.)

Snake Bites—Bites of Rabid Dogs.—The following plan of treatment is very successful in Australia in the case of snake bites, and Dr. Moriarty thinks it very suitable for cases of bite by mad dogs:—1st. The wound, if recent, should be well

sucked. 2ndly. When possible, ligatures should be applied. 3rdly. The wound and parts around the wound should be excised and freely bathed, so as to encourage the bleeding. 4thly. Caustic or ammonia may be afterwards applied, the selection to depend on the nature of the bite. 5thly. Stimulants (whisky) to be liberally given. 6thly. Half a teaspoonful of strong ammonia, and double this quantity of the tincture of assafœtida to be taken every quarter of an hour in a wine-glassful of water. 7thly. When the bleeding has ceased, the wound should be poulticed with ipecacuanha powder. 8thly. If convenient or suitable the actual cautery may be used. 9thly. In order to point out the value of stimulants, we may remark that old Indians in Canada will, with impunity, suffer themselves to be bitten by a rattlesnake, the most obnoxious of all the ophidia, after drinking a pint of whisky. 10th. The good of all or of any of these remedies will in a great degree depend on their immediate application. (Dr. Berncastle, p. 350.)

Solution of Bromine.—Bromine, in the form of vapour mixed with air, is of great value as a purifier of the air of hospitals where erysipelas, gangrene, small-pox, &c., exist. It is, however, soluble with great difficulty, except in the presence of bromide of potassium, about 160 grains of which should be added to four ounces of distilled water to dissolve one ounce troy of bromine. The solution is a very dark red, and evolves strong fumes of bromine. (Dr. J. L. Smith, p. 355.)

Tartar Emetic Plaister.—The following plaister produces a much more manageable eruption than the ointment in ordinary use:—White pitch, 40; black resin, 20; yellow-wax, 20; turpentine, 5; olive oil, 5, and tartar emetic, 10 parts. To be mixed into a plaister mass, and spread, while hot, on strips of calico, like ordinary strapping. This revulsive is of great use in chronic bronchitis and phthisis. (M. Mialhe, p. 359.)

The Actual Cautery.—The actual cautery rapidly cools down, is larger than required, and creates much vapour and smoke, which conceal what is going on, and is, moreover, a formidable looking affair. M. Nélaton proposes and practices a new method of cauterisation, using a fine jet of flame, produced by the combustion of ordinary gas, for the purpose. The small flame is projected from a thread-like tube, and may be handled as readily as a pen or a stick of lunar caustic. (M. Nélaton, p. 358.)

PRACTICAL MEDICINE.

DISEASES AFFECTING THE SYSTEM GENERALLY.

Art. 1.—ON GOUT, RHEUMATISM, RHEUMATIC GOUT, AND SCIATICA.

[By Dr. Henry Wm. Fuller, Physician to St. George's Hospital.

Dr. Fuller considers rheumatic gout a disease *sui generis*—totally distinct from gout, and equally so from rheumatism. It resembles scrofulous inflammation more nearly than rheumatism in its nature. "Rheumatic gout has a history and pathology of its own."]

Pathological research has shown that in the earliest stages of the disease the capsules of the affected joints are distended with fluid, the synovial membrane is thickened and intensely vascular, and vascular tufts or excrescences exist at the margins of the cartilages; that as the disease progresses the fluid is absorbed, the interarticular fibro cartilages are also absorbed, and eburnation of the articulating surfaces takes place; that the heads of the bones become enlarged and altered in shape by the occurrence of interstitial absorption in some parts and of irregular osseous deposits in others; and that foreign bodies of varying consistence and character are often developed both within and without the joints—bodies which are sometimes cartilaginous, sometimes bony, sometimes attached by longer or shorter pedicles to the synovial membrane or to the ligamentous structures, and at others are loose within the articulation. It has shown that these changes may take place slowly without any general febrile disturbance or any acute local inflammatory action; and on the other hand, that they may be preceded and accompanied by fever, and by pain, heat, and inflammatory swelling of the parts: that the bursæ and sheaths of tendons in the vicinity of the affected joints are prone to be implicated in the mischief, but that neither in the joints nor in the adjacent bursæ or sheaths of tendons are any of the ordinary products of inflammation found—there is no lymph, and no pus, and no urate of soda, as in gout. In other words it has shown that the characteristic changes which occur in the joints as the result of

rheumatic gout take place independently of active inflammation, and that the acute inflammatory action which sometimes precedes or accompanies these structural changes is simply a complication of the disorder, and by no means necessary to its perfect development.

And what are the conditions under which these structural alterations in the joints occur? They are not met with in the robust or vigorous, in well-fed persons with sound constitutions and sedentary habits; they do not arise, like the deposits of urate of soda in gouty men, in connection with excessive indulgence in the luxuries of the table, and defective excretion consequent on a diseased condition of the kidneys. On the contrary, they are more common in women than in men; very frequently arise in persons who lead a temperate life, and are small eaters, and never present themselves in persons who are constitutionally sound, unless they have been subjected to some cause of nervous exhaustion and enfeebled health. Their favourite victims are the offspring of consumptive parents, and especially weakly women—women whose constitution is either originally delicate and unsound, or who from some cause or another have fallen into ill health. Amongst men, the most common exciting causes of the disease have appeared to me to be the cachexia which oftentimes follows excessive venery or syphilis, or the sleeplessness and exhaustion consequent on ill-treated gonorrhœal rheumatism, or the depression resulting from anxiety, or from excessive and long-continued mental exercise, or from over-fatigue or chill in persons of a delicate constitution or scrofulous tendency; whilst in women the disease is often traceable to the cachexia entailed by perversion of the uterine functions. It attacks the girl just arriving at puberty, in whom these functions are ill performed; it invades the stiffening articulations of the woman who has arrived at that time of life which is marked by the cessation of the monthly periods; it shows itself during the state of debility which follows a miscarriage or a difficult or protracted labour, more especially when the labour has been accompanied by flooding; and it is a common sequel of over-long suckling.

But whatever the exciting cause of the disease, its primary or essential cause is the same in all instances; and although we are unable as yet to point out the precise nature of that cause, —although we know little of the morbid chemical actions which take place, and are at a loss to account for the peculiarities in the nutrition of the affected parts by which this form of disease is accompanied, it is impossible to doubt the existence of a special form of constitutional disorder. The history of the complaint, its course and symptoms, and its pathological effects, all indicate the agency of some cause distinct from that which occasions

gout or rheumatism. Our inability to demonstrate the nature of the chemical changes in the blood, or, in other words, to prove the formation of a special poison, is not a valid argument against the existence of such a poison. The same line of reasoning would be equally conclusive against the existence of any special form of blood-disorder in small-pox, typhus fever, scarlatina, and pyæmia. The fact is, our means of analysis of organic fluids are at present so imperfect, and we know as yet so little of the influence exerted on the functions of assimilation and excretion by modifications of the nervous power and other similar agencies, that in this, as in other forms of disease, we cannot even offer a reasonable conjecture as to the character of the chemical changes which take place, or as to how those changes are brought about. All that chemistry has as yet enabled us to assert is the bald fact originally pointed out by Dr. Garrod that the blood in these cases does not, like the blood in gout, contain uric or lithic acid.

Thus, then, as there is no very certain mode of diagnosing this disorder, and as, if it is to be treated successfully, its special character must be recognised early in the attack, I will endeavour to bring before you certain facts which will serve as guides to a correct diagnosis.

I would premise that the disease may make its approach either in an acute or in a chronic form. In the latter case, its true character is not likely to be mistaken; but in the former it often resembles an attack of acute rheumatism so closely as to tax our powers of diagnosis to the utmost. There may be heat of skin and profuse perspiration, furring of the tongue, reading of the urine, acceleration of the pulse, and pain, redness, and swelling of the affected joints—symptoms which, to a greater or less degree, are always attendant on acute rheumatism. But even from the first there are certain peculiarities which might to excite suspicion as to its nature. The skin, though hot, is less so than in acute rheumatism; the perspiration does not possess the peculiar rheumatic odour in any marked degree; the pulse, though quick, is feeble; the tongue is usually less furred; and the local pain and swelling are seldom confined to the knees and other larger joints, but invade the wrist and small joints of the fingers; they are more persistent than the inflammatory swellings of true rheumatism, and they attack a larger number of joints simultaneously.

If the true character of the disorder is overlooked at the first, a few days' observation at the bedside ought to rectify the diagnosis. The symptoms rarely yield to alkalies: the tongue cleans, the heat of the skin subsides, and any slight odour which may have attended the perspiration speedily disappears; but the skin remains constantly bedewed with moisture, and

becomes daily more flaccid and less elastic, the pulse gets weaker, and the pain and swelling of the smaller joints assume a more prominent aspect. The inflammation, however, though continuing so obstinately, is not so acute, and does not appear to threaten the integrity of the joint, as true rheumatic inflammation does under similar circumstances. When true rheumatism fixes obstinately on a joint, the fear of permanent mischief and anchylosis of the joint at once presents itself to the mind. The inflammation of the other joints subsides, but the pain and swelling in the one joint increase daily; and it is obvious to the merest tyro in medicine that if that joint be not kept motionless, and leeches, blisters, and fomentations, or mercurial ointment applied, anchylosis of the joint is the most favourable issue which can be expected. But it is otherwise in respect to the inflammation of the joints which accompanies rheumatic gout. Rarely, indeed, in the acute form of the disease, is the inflammation confined to one joint; on the contrary, three or four, or even a larger number, of the joints remain affected throughout. There is not the same heat, or redness, or tenderness of the affected joints; the fear of adhesive or suppurative mischief does not arise; the application of a splint, and of leeches and blisters, does not suggest itself; and although the joints may remain permanently enlarged and distorted, they do not become anchylosed.

When the disease makes its approach more slowly, and assumes from the first a non-acute or chronic form, its features are much more distinctive. The patient feels weak, languid, and uncomfortable; she is oftentimes chilly, but nevertheless perspires on the slightest exertion; the appetite is capricious, the pulse feeble, the urine often pale and clear, and the spirits are much depressed. Up to this time probably there may have been no swelling of the joints, and possibly no wandering pains in the limbs, so that no suspicion is entertained as to the nature of the impending mischief. The ill-health is attributed to the effect of a mercurial course, to the drain resulting from an excessive flow of the monthly courses, to profuse leucorrhœa, to amenorrhœa, or to one of the many causes which are productive of ill-health, and which may have been present in the particular case in question. But after a longer or shorter period, some pain or stiffness is perceived in one or more of the joints. Not unfrequently a knuckle becomes stiff and swollen for weeks or months before any other joint is affected; and even though the knees or other of the larger joints be enlarged, the knuckles rarely escape. They are seldom red, inflamed, or very tender to the touch; on the contrary, they are relieved by gentle friction, and will often derive benefit even from tolerably active rubbing. Effusion within the joint is the principal cause of

heir enlargement; but the bursæ and sheaths of tendons round the joint are also implicated, and are felt as circumscribed wellings. Moreover, the mischief is seldom confined to the mmediate vicinity of the joints, but the sheaths of tendons may e felt hard and swollen in the palms of the hands and in other arts more or less remote from the primary seat of inflammation.

In the more advanced stages of the chronic form of the disrder, the peculiarities of the case become even more apparent. Depression of spirits is a prominent symptom: the constant lammy moistness of the skin is quite characteristic; the exraordinary number of the joints implicated in the mischief is nlike what is observed in any variety of true rheumatism; nd the form of the articular swelling is such as cannot posibly be confounded with the effects of rheumatism. It is obiously due, in great measure at least, to enlargement of the xtremities of the bones themselves, and not merely to effusion ithin their capsules, or to the thickening of the surrounding ructures. Thus a material alteration occurs in the form, and ftentimes in the direction of the joints. The fingers, for inance, are drawn towards the ulnar or outside of the hand, and ake a permanently oblique direction; whilst the enlarged and artly dislocated extremities of the bones, more especially of ne metacarpal bones, project in every variety of form, and onstitute the nodosities which have been described by Dr. Haggarth in his "Clinical History of Disease."

Thus, then, to sum up the principal facts which have a practical bearing on the treatment of the disease, it may be stated st. That the malady originates in mal-nutrition, resulting not nfrequently from some hereditary infirmity of constitution, ut sometimes in connexion with cachexia induced by a variety causes which exhaust the nervous system. 2nd. That ne local changes to which it gives rise are essentially disnct from those produced by active inflammation, and more early resemble the results which might be expected from a ow perversion of nutrition; indeed, a similar tendency to the rmation of exuberant osseous growths around the joints hilst the articular textures within are suffering destruction nd decay is observed in malignant disease of the joints, and in arious strumous affections of the joints, both of which are nnected with a constitutional taint. 3rd. That whether in n acute or in a chronic form, the malady is one and the same, ue to the same cause, connected with a similar failure of tone the system, and productive of similar changes in the joints; e only difference observable between the results in the acute nd chronic cases respectively being that in the former they cur more rapidly than in the latter.

If this view as to the nature of the disorder is correct,—and

its whole history leaves little room for doubt on the matter,—it follows that any treatment to be successful must have for its object the sustentation of the general health and the restoration of tone to the system. Whilst this is being effected, means may be taken to subdue the local irritation of the joints, and thus to mitigate our patient's suffering; but the primary object must be to improve the health, and so to check the continuance of those actions on which the enlargement and distortion of the joints depend. The remedies which are most serviceable in rheumatism and gout are of little avail in this form of disease. Colchicum, iodide of potassium, guaiacum, hot baths, vapour baths, and other similar remedies, if prescribed with a view to eradicate the disease, prove mischievous rather than beneficial. They depress and enervate the patient, who is already low and exhausted; and thus they serve to establish the disorder which they were given expressly to get rid of. In private no less than in hospital practice the mischievous results which follow this mode of treatment almost daily force themselves on my attention. In short, if the remedies above named are to be employed at all in the treatment of rheumatic gout, they should be used cautiously as alteratives in conjunction with tonics, and should not be administered as agents to be relied upon for the cure of the disease. The more I have seen of this form of the disorder, the more thoroughly have I discarded the views which, in common with other medical men, I formerly entertained respecting its treatment, and the more completely have I learned to trust to tonics and occasional alteratives. In the acute stage of the disorder it may be necessary for a few days to administer alkalies and alterative doses of blue-pill or calomel, and to restrict the diet to broth or beef-tea; but when once the true nature of the malady has declared itself, I believe that in the majority of instances the more successful plan, notwithstanding the acute character of the symptoms, is to administer bark or quinine in combination with small doses of alkalies, and as soon as possible to interpose and check the continuance of the enfeebling clammy perspiration by means of a cold shower-bath or the dripping-sheet. Indeed, whether the disease be in an acute or in a chronic form, the general state of the system and the ever-varying condition of the secretions are the only rational guides to treatment. If, as often happens when the disease is chronic, the secretions are tolerably regular and healthy, if the bowels are acting daily and the alvine dejections are of a natural colour, if the urine is clear and remains so on cooling, and if the skin is neither dry nor damp and clammy, the most effectual remedies are bark, quinine, strychnine, iron in its different forms, cantharides, arnica, sarsaparilla, the mineral acids, and cod-liver oil; and they must be given in doses pro-

portioned to the amount of depression they have to counteract; further, their action must be assisted by fresh air and exercise, change of scene, and a generous diet: meat twice or three times daily, with a full allowance of porter or ale, and wine, are essential adjuncts to the treatment. On the other hand, if the motions are pale, calomel or blue-pill must be given as alteratives; if the urine is loaded with lithates and the bowels are torpid, these secretions must be regulated in the ordinary way by the exhibition of purgatives and alkalies; the diet at the same time must be more or less restricted, and malt liquor prohibited. But even in these cases care must be taken not to depress the patient; and while brandy or gin or whisky is substituted for the malt liquor and wine, an endeavour should be made to discover some nutritious food which the patient can digest and assimilate. If the skin is clammy, and the shock of cold water is followed by reaction and warmth of the surface, a cold shower-bath or the dripping sheet should be employed daily, for nothing tends so powerfully to stimulate the capillary circulation and restore the tone of the system.

You will always do well to inquire whether your patient ordinarily enjoys better health in winter or in summer, in cold weather or in warm,—as the reply you obtain will serve as a tolerably trustworthy criterion as to whether she is likely to be benefited by cold water. When a patient who is suffering from rheumatic gout tells you that she is usually stronger and more vigorous in cold weather that in hot, you may confidently recommend the daily use of a shower bath. It will brace and stimulate her, and will contribute as largely to her recovery as any medicine you can administer internally. There is nothing more remarkable in the whole range of therapeutics than the rapidity of the improvement sometimes observed under the influence of this remedy. Even when a patient tells you that she is not much affected by temperature, but that she is often chilly and dreads cold water, I would urge you not to be deterred from having recourse to its assistance. The chilliness in such a case is dependent on the vitiated condition of her blood, and not on any innate delicacy or any deficiency in her power of resistance to cold: consequently the shower-bath, by imparting a stimulus to the system will conduce to the better performance of the various functions of the body, and so to an improvement in the condition and circulation of the blood, and to a cessation of the sense of chilliness. If you are not consulted until the patient has been greatly reduced by illness, and has a feeble pulse, and scarcely sufficient power to enable her to rally from the shock of the shower-bath, you may order the dripping-sheet as you have seen me do, with excellent results, under similar circumstances. The shock is somewhat less, and so also is the chilling effect on

the system. But I would have you bear in mind that it is impossible *à priori* to determine whether reaction will take place after the shock of cold water. Sometimes a person whose circulation is so weak as to render it improbable that she would be able to withstand it will feel refreshed and invigorated by it, and will glow with warmth in a few minutes afterwards; whereas another person, apparently stronger and less reduced by illness, will be chilled and exhausted by it, and will suffer from cold the whole day. One or two trials, however, will settle this question, and the bath is such an important agent in the treatment of these cases that the matter ought never to be allowed to remain undecided. The only cases in which its effect is doubtful are those in which the patients, even when in health, were always better in summer than in winter, and have always suffer from cold. In these cases, if the clamminess of the skin appears to require the use of the cold shower-bath, a small quantity only of cold water should be employed. The patient, when taking it, should stand in hot water, and a cotton sheet should be thrown round her as soon as she steps out of the bath. With these precautions there are few persons who cannot withstand the shock of the water, and as few who will not benefit by it.

Another point is relative to the use of a cold douche, and the means of obtaining one. A few jugs of water poured on the affected joint are of little or no service in these cases: the force of the water is not sufficiently great, nor is its action sufficiently sustained. In none of the London or provincial general hospitals with which I am acquainted, nor in most of the towns in the United Kingdom, is a good douche-bath to be found, and therefore if we wish to avail ourselves of this valuable agent in the treatment of stiffened joints we must either send our patients to a hydropathic establishment, where this species of bath is admirably arranged, or extemporize one for ourselves at the residences of our patients. Fortunately it is not difficult in most houses to arrange an efficient douche-bath for the knees and ankles—the parts to which this description of bath is specially applicable. All that is required is a large tap, communicating with a cistern of water placed at a considerable elevation above it. Two yards of India-rubber tubing affixed to the tap will suffice to carry the stream of water towards the affected joint, and a large empty bath will receive it as it flows. You may think this a trivial matter for me to dilate upon, but if you are really in earnest at your work, and are aiming at the attainment of proficiency in relieving human suffering, you will not despise the smallest matters which can contribute towards the object you have in view.—*Lancet, Sept.* 26, 1863, *p.* 355.

2.—ON THE TREATMENT OF RHEUMATIC FEVER.

By Dr. J. Birkbeck Nevins, Lecturer on Materia Medica, Royal Infirmary School of Medicine, Liverpool.

[The plan of treatment recommended by Dr. Nevins is one which he has tried extensively for above fifteen years, though he does not claim the credit of originality. During this period he has also tried the various plans in vogue, viz., the opiate, the alkaline, the lemon juice, and the do-nothing treatment, but he has always returned to his accustomed plan.]

It is impossible to observe many cases of rheumatic fever without being struck by the periodicity of the disease, as shown by the general aggravation of the pain and other symptoms as night comes on, and also by the copious sweating which enfeebles the patient, rather than relieves him. The long continuance of the illness, and its liability to return after apparent recovery, and the length of time requisite for regaining strength, are also well known features. In some of these particulars, but especially in its periodical exacerbations and in its sweatings, Heberden and others, and Dr. Davis of University College, in a very able paper on the subject, have at different times noted its similarity to ague, and advocated the employment of cinchona or quinine for its cure; and it is this drug upon which I look as the basis of the treatment to be proposed to you. At the same time, the experience of the profession generally has shown the great value of iodide of potassium in chronic rheumatism; and, remembering the tendency of this disease to become chronic, I always combine this medicine with the quinine, and commence their administration *from the earliest date at which the patient comes under my care.* The presence of acute pain and high febrile excitement does not, in my experience, form any objection to their employment; and the thick creamy fur upon the tongue disappears more rapidly under their use than under the different methods which I have compared with it, in my own practice, or when noticing that of my brethren in the profession. The dose never exceeds two grains of quinine four times a day, with five grains of iodide of potassium added to each dose.

The pain and loss of rest are, however, so distressing to the patient, that we have been advised to administer opium in quantities only limited by the effect produced. And the employment of this drug as far as may be necessary for subduing the pain is a very important point; and I therefore always have two or three doses of opium pill or of Dover's powder with the nurse, which are to be given successively, if the patient

is in severe pain; but I very rarely indeed find that the patient has even asked for more than a single dose in the twenty-four hours, which I attribute to the speedy and more permanent relief obtained by the following element of the treatment, to which I attach very great importance. This is, *the employment from the very first of steam-baths, even when the patient is so helpless that it is impossible to move him from the bed* on which he is lying. These steam-baths relieve the pain and check the distressing perspirations in a degree which I have failed to obtain by any other mode of treatment; and they are administered with the greatest ease in the following manner.

A couple of common red bricks are to be placed in an oven hot enough for baking bread, and in half an hour or little more they are sufficiently heated for the purpose. The patient's body-linen having been previously removed, these two bricks are to be folded up in a piece of common thick flannel thoroughly soaked in vinegar and laid upon two plates; and one is to be placed about a foot distant from one shoulder, and the other about equally distant from the opposite leg;* and the bed-clothes are then to cover the bricks and the patient closely round his neck. A most refreshing acid steam-bath is thus obtained; and the supply of steam may be kept up, if necessary, by removing one brick and replacing it with another hot one kept in reserve. When the patient has been in the bath for about fifteen or twenty minutes, the bedclothes and plates should be removed, and *the patient instantly mopped all over very rapidly with a towel wrung out of cold water*, and then should be quickly rubbed dry.† Dry warm linen must be put on at once, and dry bedclothes must replace those which were on the bed previously. The patient generally experiences great and speedy relief from this bath. The exhausting acid sweats are materially diminished; and the necessity for opium, as already mentioned, is almost at an end.

But here the objection naturally presents itself: a patient in rheumatic fever suffers so severely from the slightest attempt to move him, that we are frequently obliged to leave him several days without changing his linen, from the pain occasioned by the attempt to remove it even leisurely; and we have just been told to change it quickly, which implies that the case cannot be a very severe one, or this direction could not be

* Care must be taken not to put the bricks too near the body. I have known the thigh blistered in a patient who was unable to move away from the heat which was accidentally very near it. A dry napkin thrown over the wetted one will prevent this accident, if the bed is too narrow to allow sufficient space.

† The under sheet can be removed, and a dry one substituted by fastening the corners of the dry sheet to those of the damp one. Very little difficulty is generally met with in simply drawing the old sheet from under the patient, when the dry one follows it, and is left in its place.

arried out. The difficulty is really of the most trifling character, the simple precaution is adopted of tearing the night-shirt pen from top to bottom down the back. The sleeves are then ipped over the patient's arms almost without moving them; nd the torn edges of the linen are gently tucked under his side, om which they can be just as easily withdrawn the next day. nd by this means he is freed from the discomfort of lying day ter day in linen soaked with acid perspiration; and this is ne without the smallest pain to himself or trouble to his urse. For many years I used large lumps of quick lime, and apped them up in cloths soaked with cold water; and, as on as the lime began to slack, the patient was enveloped in a eam bath from simple water; but in many places it is difficult obtain quick lime, and the vinegar is also more refreshing to e patient; so that the vinegar and hot bricks have now quite perseded the lime-bath.

These, then, are *the essentials of the treatment*: *quinine and dide of potassium from the first, and the steam-bath, with the bsequent cold sponging;* and, as an adjunct, opium in small oses, when necessary, to procure sleep.

It now remains to speak about the success of the treatment. uring the fifteen years it has been in use, I have only had casion to apply a blister over the heart in three instances; nd this was done because the patient complained of uneasiness the chest, not because there was any distinct evidence of ericarditis. There has not been one case of distinct rheumatic fection of the heart; but the absence of clinical reports puts out of my power to state how many cases have been thus eated. I can merely say that they have been numerous.

Next, as regards the duration of the disease; it is extremely re that it is necessary to give two steam-baths in bed, the atient being almost always able to have the second whilst tting upon a chair; from which you will draw your own conusion as to the rapidity of improvement. I am surprised hen the patient is not able to walk about the room, a little at y rate, in little more than a week; and I have a strong pression that he is more frequently able to do this within the eek than not. But here, again, the absence of exact reports ust be taken into account. I further think that from two three weeks is the average duration of the case before the atient is able to walk up and down stairs, and to go out of oors for exercise or pleasure. Relapses are not common; and e patient has not the lingering convalescence which I have served under other methods of treatment.

The steam-baths and subsequent cold douche should be conmued after the patient is able to walk about, as they contribute

to the healthy action of the skin, and promote the free mobility of the joints.*

If there is great tenderness of any one particular joint, an opiate embrocation, containing in addition either chloroform or tincture of aconite, should be gently painted over the part two or three times a day; but, in the early stage, the employment of friction appears unadvisable whilst the pain is very acute.

The recommendations of the method now presented to you are: that the patient's strength is husbanded from the first, and he has neither the protracted disease nor the lingering convalescence often observed. Pain and sweating are more quickly relieved than by any other treatment I have seen. Relapses are very rare; and so far I have not seen any case of cardiac affection occurring as a consequence of the rheumatism. I have a strong conviction that, if the method is fairly used in two or three cases, it will leave the same favourable impression upon the minds of those who try it that it has produced upon my own, and upon the students who have watched its employment in the hospital to which I have alluded.—*British Medical Journal, August* 1, 1863, *p.* 113.

3.—ON THE TREATMENT OF ACUTE RHEUMATISM.

By Dr. Thomas Inman, Physician to the Liverpool Royal Infirmary.

I know no fallacy in medicine upon which theories have been built more marked than that the sour smelling perspiration is evidence of the elimination of a poison, and that the poison eliminated is an acid, and consequently that alkalies are the remedies *par excellence*. The peculiar smell is simply the result of decomposition. The theory is as untenable as one founded upon the ammoniacal smell of a baby's foul napkin. Only fancy the absurdity of treating a bad typhus case with some acid because the bed linen smelt ammoniacal from the effect of incontinence of urine and the difficulty of renewing the sheets frequently! Yet on precisely similar grounds the generally received pathology of acute rheumatism has been based!

* These baths are very easily given by placing the patient naked upon a chair, and putting a can containing a couple of gallons of boiling water under it. Blankets are then to be folded round his neck, and made to surround him like a tent, reaching to the floor. In about five or ten minutes, a red-hot brick should be put into the can, which renews the supply of steam. The patient soon perspires; and in fifteen or twenty minutes the blankets should be removed, and a couple of quarts of cold water should be poured over his shoulders: or, if he is afraid of such heroic treatment, he should be mopped from head to foot with towels wrung out of cold water. By this means he is invigorated instead of feeling weakened, and depressing perspirations do not follow the bath. The patient should sit upon a pillow or doubled blanket, on a close-bottomed chair, not upon an open cane-bottomed one. I have known a patient scalded by the accidental neglect of this precaution.

When such an untenable proposition is held by medical professors, a theory so baseless as to prevent the adherence of any one with ordinary common sense, we ought to be more charitably disposed to other theorists than we are and have been. But ignorance is always intolerant and will continue to be, in spite of moralists.

Since I have adopted Dr. Rees' suggestion, however, and treated my patients with lime-juice alone, the result has been far different.

During the ten years I have been a hospital physician, I have had under my care a hundred cases of acute rheumatism, and all of them have been treated with lime-juice at the rate of eight ounces per day. In five the heart has become affected, but in all the affection has been transitory. Not one has left the hospital with a permanent cardiac disease. One patient died suddenly; he had recently had pneumonia as a complication, which passed off in two days; he was well enough to sit up in bed and was talking vivaciously, when he suddenly died —no *post mortem* was allowed.

The average duration of the cases under my care is fourteen days; but this is made so high by ten of unusually long duration and great initial severity. In one very interesting example the duration was due to artificial lime-juice having been fraudulently substituted for pure by the druggist, and being used until I discovered the fraud by the impotency of the medicine: while at the Liverpool Northern Hospital four days generally sufficed for convalescence, and during seven years only one case lasted for three weeks. Successive junior house-surgeons, fresh from the London Hospitals, as they arrived went through an interesting course of sneers, doubts, and confidence.

On being elected to the Liverpool Royal Infirmary, however, the plan met no such conspicuous success, and from the region of confidence I was myself beaten back into the domains of doubt.

Thus stood the point: London men, after a trial of the virtue of lime-juice, gave a verdict of not proven. The physicians at the Liverpool Royal Infirmary, at the very time when I at the Northern Hospital was meeting with a success which surprised myself, gave the medicine an ample trial and abandoned it as unsatisfactory: and when I was transferred to the same institution my own experience tallied with theirs. While at the one place I saw case after case so bad one day that all motion was impossible and the patients crying with the intensity of their sufferings, and three days afterwards walking about the wards apparently quite well; and this occurred so frequently that a duration of a fortnight in the hospital was an extraordinary occurrence. The sequence of cause and effect seemed as marked

as anything could be. If the lime-juice was not used in a sufficient quantity, or was old, bad, or fictitious, there was no improvement; but as soon as the proper quantity and quality was secured the restoration was immediate. I could as soon doubt the efficacy of opium in procuring sleep as I could the efficacy of lime-juice in curing acute rheumatism. Yet in another part of the town, in another institution, I began gradually to lose faith in the remedy. The reason of this I cannot as yet make out. It may be, that there are varieties in disease of which we know little; that the complaint is influenced by local circumstances not yet thought of or understood. It may be, that, as some epidemics of small-pox are more deadly than others, so at one time the cases of rheumatic fever are mild, at others severe. It may be, that endemic influences vary in their intensity, just as malaria does; few now venture to deny the value of quinine in ague, yet every physician can recall instances in which it has been apparently useless.

To demonstrate, if possible, the cause of this uncertainty, I have treated my patients in a variety of ways. Having heard extraordinary vaunts of the value of large doses of carbonate of potash in one of the London Hospitals, I determined to test the plan fully. The result was a complete failure, and I was forced to the conclusion either that certain symptoms go by the name of acute rheumatism, which have no real claim to the title, or that experience gained in one locality is useless for another. As the doses used were in some cases sufficiently large to induce severe purging, there could be no doubt that the failure was not attributable to a feeble use of the drug.

After the carbonate of potash, I gave a full trial to the nitrate, after that to quinine, to opium, to wine, to steel, to cod-liver oil.

Nor did we omit the use of such simple remedies as liquor ammoniæ acetatis, and the still more simple one of pure water.

From none of these plans have I been able to obtain so satisfactory a result as from the treatment by lime-juice alone, although the balance in its favour over warmth, comfort, and nutritious diet, without medicine superadded, is not unvaryingly large.

The practical effect of the doubt, therefore, respecting lime-juice, is simply to modify the belief in the constancy and certainty and celerity of its operation.

Of its superiority over any other medicine yet administered I have no misgiving.

The way I employ it is simple:—the patient is directed to take at least eight ounces of it in the day, and no other medicament of any kind whatever is used unless it be opium to procure sleep at night. If the skin is very white, the tongue much

oaded, and the perspiration excessive, two drachms of the incture of sesquichloride of iron is given in addition during he 24 hours, and some wine at dinner-time and in the evening. f, during the progress of the case, the hands or feet become nusually swelled or painful, they are merely wrapped up in otton wool which has been freely sprinkled over with tincture f camphor.

If the heart become affected I make no difference in the plan roposed; I continue the lime-juice as if nothing unusual had ccurred, with the full confidence that the complication will be vanescent, nor have I yet been deceived. When this accident ccurs, mercury, bleeding, or cupping, seem to me to have the ffect of aggravating the mischief and of rendering a transient omplaint a permanent disease.

Of the *modus operandi* of lime-juice I can form no idea. egetable acids, *e.g.*, citric or tartaric, are not substitutes for . Lemon-juice is inferior to it, though to a very small degree, o that we infer that it is not the particular acid which does the ood. I have never known it purge, though it has seemed to ripe occasionally. It acts quietly yet almost certainly, as does rsenic in lepra, quina in ague, and colchicum in gout.

This treatment is very simple, and to the patient very plea- nt. One of its chief advantages is, that it does not aggravate e extreme debility which attends and follows the fever.

It ought entirely to supersede the system of drenching, once commonly practised under the notion that a poison had to be iminated out of, or destroyed in, the system.

I must add, that since the preceding pages were written, I ave had under my care three unusually protracted cases of ute rheumatism, attended with extreme debility, total norexia, and a constant tendency to relapse. These gave me pportunity of testing the real value of every suggestion hitherto fered, and all drugs proved equally worthless for cure; this as at last effected, and suddenly, by simply change of air.

These cases seemed to unsettle the conclusion already drawn; a certain extent they do, but that extent is small. We do t lose faith in arsenic because many a case of lepra is uncured it; nor do we have less confidence in quina because we see at nes a man who is cinchonized have an ague fit; we still lieve in mercury though it often fails to remove "secondaries," d we still prescribe opium for the relief of pain, though it is werless to arrest the agonies of gout.

In fine we constantly have to confess that we possess no single nacea, that disease often baffles our best endeavours, and at the most skilful physician is but a man after all.

But though a man he may be a destroyer rather than a helper, and surely it is something to know how we may certainly escape being the former if we cannot invariably be the latter.

[Lime-juice may be procured in Liverpool at a shilling the quart bottle. It is generally taken out by vessels going long voyages. It is far more palatable than lemon-juice.]—*London Medical Review, March* 1863, *p.* 458.

4.—ON DEPLETION AND EXCESSIVE (?) STIMULATION IN SERIOUS CASES OF ACUTE DISEASE.

By Dr. Lionel S. Beale, Physician to King's College Hospital.

Although the arguments advanced in favour of depletion in acute inflammations and fevers have again and again been refuted, the idea that blood should be taken in inflammatory diseases still seems to be acted upon. If a patient has too much blood for the requirements of the system, or if the vessels of a particular part are over-distended, it is obvious that general or local bleeding to a moderate extent may be of advantage to the patient; but undoubtedly, there still exists an impression that depletion is the right treatment to be pursued to *combat* inflammation.

It seems to be the opinion of some practitioners that pneumonia should be treated by depletion; nor is the general condition of the patient always considered. Attention is directed to the disease solely; and blood is taken because the practitioner believes that early bleeding will stop the spread of the inflammation, if not cause resolution of that already set up.

The old principles are to some extent believed and timidly acted upon; but few of those practitioners who hold that bleeding will cut short inflammation will be inclined to exhibit consistency in carrying out their principle. Some will bleed *because* there is pneumonia, and may deplete again *because* the pneumonia has increased; but no one will in these days bleed again and again if the disease continues to advance; nor would any one bleed very largely in what appeared to be a hopeless case from the first, as would have been the practice formerly.

The old theory of the nature of inflammation still continues; and the old practice based on it, although long since proved to be erroneous, is still acted upon to a limited extent; and both theory and practice prevent us from observing clinical facts without prejudice. Though forced to give up the old system of depletion, there are comparatively few practitioners who believe that when a large amount of lung is hepatised, and the patient breathing sixty or seventy in a minute, that it is right to give

arge quantities of stimulants. There are few who can completely abandon the notion that inflammatory processes are excited by stimulants—that to give stimulants in inflammation is to add fuel to the fire.

Nevertheless, it is admitted in practice that no severe case of pneumonia could be saved by active depletion; for it is known that time is required for the absorption of the matter occupying the air-cells of the lung. In a very severe case, the most momentous subject for consideration is how to keep the patient alive long enough for the process of absorption to take place; not how *the inflammatory process* may be cut short, reduced, or removed. For this purpose a line of treatment the very opposite to depletion must be adopted.

Many cases prove that, what would be called by many, excessive stimulation, does not *prevent* the rapid resolution of pneumonia. Stimulants do not increase inflammation, nor do they prevent absorption. Although the whole of one lung may be killed, excessive stimulation does not increase the rapidity or embarrassment of the breathing. In extreme cases, by excessive stimulation, life may be prolonged for a sufficient time to allow the reabsorption of the matters effused. Disease is not *cured* by stimulants; but the patient may be kept alive long enough to get well. Here and there a life may be saved by giving as much stimulant as possible; but by carrying the opposite system to extremes, death is a necessary consequence.

In desperate cases of fever, pneumonia, rheumatic fever, and other conditions where there is intense exhaustion, stimulation may be safely pushed to the utmost extent possible.

I shall not now discuss *how* stimulants in very large quantity influence disease, but shall, in conclusion, beg permission to direct attention to certain clinical facts which have been observed in many bad cases of pneumonia and rheumatic fever, placed under the influence of large quantities of stimulants *(eighteen ounces of brandy and upwards in twenty-four hours.)*

1. The pneumonia does not extend.
2. The embarrassment of respiration is not increased, nor is the breathing increased in frequency.
3. The inflammatory products are absorbed, and free excretion goes on.
4. The pulse is not increased; but diminishes in frequency, and increases in power.
5. Delirium is not caused, but may be prevented from occurring; or if present, may diminish or cease.
6. The tongue may remain moist or become moist, and the fever diminish while a patient is taking *twenty-four ounces of brandy in as many hours.—British Medical Journal, July* 4, 1863, *p.* 2.

5.—ON THE HEMOSTATIC TREATMENT OF CHOLERA, HEMORRHAGE, EXHAUSTION, ETC.

By Dr. Thomas A. Wise, F.R.S.E.

[The idea of Dr. Wise in this paper seems to be, that, as in certain diseases the blood leaves the extremities, the internal organs becoming intensely congested, by mechanically arresting a considerable quantity of blood in the extremities, many of the more urgent symptoms may be ameliorated.]

The circulation may be controlled in two ways—1st, by retarding the blood in the veins, and, 2nd, by stopping the circulation in arteries.

To retard blood in the veins of a limb as a therapeutical agent.—In patients with the premonitory symptoms of apoplexy, in severe cases of dyspnœa, in some organic diseases, and even in inflammation of particular organs, the temporary withdrawal of a certain quantity of blood from the general system, and its retention in the extremities, may sometimes be used with great advantage. It is easily accomplished by the application of a field tourniquet upon one or more extremities.

Stopping the arterial circulation in a limb.—It must not be supposed that a clamp or horse-shoe tourniquet, when compressing the chief artery of a limb, acts merely on the part, by stopping the circulation—it powerfully affects the whole system. If applied to the femoral artery, probably a pound, of the two pounds of blood intended for the limb, is prevented passing into it, and makes its way back to the heart, causing a more rapid and forcible circulation over the diminished circle.

2. As many diseases are local, and are connected more or less with morbid congestions of blood, which generally produce the pain and the derangement of the functions of the affected organs, by so closing a portion of the circle you thus enlarge the volume of blood, and increase the force of the heart, which has a most powerful influence in removing local congestions in the internal organs.

It is not, however, in every case that the treatment can be employed with the same good effect. It is in the large class of functional diseases that the partial stoppage of the circulation is of so much permanent use; and even in some organic diseases it may be employed with advantage by withdrawing so much blood from the circulating system of the part. By thus placing a ligature so as to press upon the chief artery of one or two extremities, the general mass of blood circulates through a smaller circle, and in some diseases produces a powerful tonic or stimulating effect upon the general system.

In those sudden and appalling cases of uterine hemorrhage the effect is very marked; and the fatal result is often arrested by

is prompt and energetic interference. In such cases the tient is often left in a collapsed pulseless state, without the antity of blood necessary for carrying on the vital functions, r which the strongest stimulants are used in vain; and in a rge proportion of these cases, after a faint return of animation, e patient sinks into a state of collapse, and dies from exhaus-on, without any further loss of blood. In such a case, the uple means of contracting the extent of the circulation, by sing one or more of the arterial trunks, will be of great lvantage. Mr. Wardrop states that the effort of raising a tient, in such a case, and accidentally closing the humeral teries, was found sufficient for nature to rally. This will be ore effectually done by raising the limb, pressing the venous ood onwards, and applying a clamp-tourniquet to the humeral d femoral arteries, by which upwards of a pound of blood, nt to each limb, is stopped, and finds its way back to the art. This diminished vascular circle, and increase of blood, imulates the heart's action, and the greater volume of blood s a powerful influence in strengthening the weakened system.

In the collapsed stage of cholera, when, in many cases, the ysician first sees his patient, the system is so much prostrated at the most powerful medicines have no effect, the application the tourniquet affords the only chance of cure. This most werful remedy immediately removes the painful cramps, and oduces the same equalizing effect as blood-letting, without the bility caused by this evacuation. It likewise increases the lume of blood, which stimulates the heart to increased action, moves morbid congestions, and, changing the morbid distri-ution of blood from the secreting surface of the alimentary nal, sets up a new and salutary action in their place. It thus ords the most ready and most powerful means of rousing the stem. By this means the purging and vomiting are stopped, e pulse becomes stronger, the heat and strength of the system e quickly restored, and time is allowed for medicines to act.

The tourniquet may be applied to two or to the four extremi-es, according to the effect intended to be produced. When e individual is weak, and the state of collapse great, more ce is required in emptying, by friction, the blood in the veins the extremity to be bandaged; and the effect will be more rked if the tourniquet be applied to four extremities. It may kept on for hours, or even for a day or two. In one case I pt the tourniquets applied for three days—as the exhaustion s very great—with the best effects; only relaxing one or more, it appeared necessary. When reaction has taken place, by axing cautiously one or more of the tourniquets, so as to allow e blood to flow to the extremities, it afforded a ready means relief. In a pretty extensive experience I have not seen any

bad effects produced by the application of tourniquets. The effect, however, varies according to the stage and severity of the disease. When the patient is stronger, or when reaction has taken place, the pressure of the tourniquets is complained of—and much care is required to prevent the patient loosening them. If it be done too abruptly the blood spreads over the extremities, and the patient rapidly sinks.—*Dublin Quarterly Journal, August* 1863, *p.* 60.

6.—ON SOME POINTS IN THE PATHOLOGY OF TUMOURS, TENDING TO ILLUSTRATE THE SUBJECT OF THEIR DIAGNOSIS.

By Thos. Bryant, Esq., Assistant Surgeon to Guy's Hospital.

As a leading pathological principle it may, I think, be unhesitatingly asserted, "*that all tumours, with the exception of the hydatid, are made up of one or more of the natural elementary tissues of the body, and that in no single example has any extraneous or new element been ever detected.*" For just as the natural body is built up of cells and fibres in one or other of their different forms, so tumours are made up of like elements, although it may be in unequal proportions. Tumours, like the natural tissues, differ, therefore, anatomically, according to the nature of the elementary structure of which they are composed; and this again appears to be materially determined by the part of the body in which they are developed.

From this, therefore, a second leading principle may be fairly drawn, "*that all tumours partake of the nature of the part in which they are developed, and are more or less made up of the elements which naturally enter into its formation.*"

Thus a tumour developed in the stroma of a fibrous structure will probably be fibrous, if connected with bone more or less osseous, and if situated in a gland, it will, in all probability, partake of the gland structure.

The bearing of these pathological principles upon practical matters is by no means unimportant; for to the surgeon, who has once recognised the true position of a tumour, there is a certain amount of probability as to its nature which will at once suggest itself to his mind. If the tumour be situated in the skin or subcutaneous tissue, there is a strong probability that it will be composed of some one or other of the structures of the tissue. It may be the sebaceous—which is never found in any other position—or the fatty, for these two materials enter largely into cutaneous structures; or it may be one of the fibrous or fibroplastic nature—fibre-tissue existing freely also in these parts.

Should the tumour be located between the muscles of a part, here is again a probability as to its true nature, which will naturally suggest itself; for, as cellular tissue alone exists in these parts, the tumour will probably be composed of some of its elements, and these, being formed in excess, will give rise to the growth of a fibro-plastic tumour. Should bone, again, be the seat of the disease, some one of the elements of bone will, to a certainty, enter into its formation; the probability of its being an enchondroma, osteoid, or myeloid tumour, naturally presenting itself. And, lastly, should a tumour be present in a gland, such as a breast, uterus, or prostate, the probability of it being an adenoid cannot be overlooked; for pathologists now all recognise the fact of the close resemblance of tumours so situated to the natural gland structure.

These remarks, however, apply principally to simple tumours; for it must be borne in mind that cancerous or embryonic cell tumours may exist in any part, cells entering naturally into their formation.

All tumours are either simple or cancerous, innocent or malignant; the simple or innocent approaching in their nature the more highly organized natural structures of the body, even to the perfect glandular; and the malignant or cancerous simulating the most elementary or embryonic; for as the normal tissues were formed from a simple cell, and those of a higher grade from its development, so the cancerous element is a simple cell, or the undeveloped embryonic nucleus.

In proportion, therefore, to the amount of the cell element in a tumour may its cancerous tendency be determined; and the greater the proportion of the fibrous or well-developed structure, the greater the probability of its nature being innocent or simple. The more a tumour simulates the natural structure of a tissue or gland, the greater is the probability of it being innocent; the more a tumour simulates the undeveloped cell structure, the greater the certainty of its being cancerous.

The formation of simple or innocent tumours is, therefore, to be explained by the unnatural growth or collection of some one or other of the simple natural elements at one spot; and the formation of the cancerous tumour is to be accounted for by an undue growth and repetition of the embryonic cell or nucleus. which should naturally have passed on to the development of higher structures.

Tumours never change their original nature, nor pass on nor degenerate into others of a different kind. A simple tumour is simple to the end, and a cancerous tumour is cancerous from the beginning. This opinion is a pathological fact, which it would seem unnecessary in these days of advanced pathology to lay

stress upon; but, oddly enough, an opposite opinion is still repeated in some of the students' text-books, and this being the case, the truth may be again enforced. The above lines are not intended, however, to convey the impression that a patient, the subject of a simple tumour, may not become the subject of a malignant one, or *vice versâ*, for such may unquestionably be the case; and after the removal of a simple tumour a malignant one may secondarily make its appearance. But no simple tumour by growth or degeneration will become malignant, as no malignant tumour will become innocent. It would appear, however, that in recurring innocent tumours there exists a tendency for such growths to present on each return, more the elementary character of the malignant growth. *Simple tumours separate tissues in their growth, but never infiltrate; cancerous, as a rule, infiltrate, and rarely separate.* No more important practical point can be brought forward to aid the surgeon in his diagnosis of a tumour than the above. For a simple or innocent tumour, however long it may be in growing, and however large a size it may attain, will never do more than separate the parts between and beneath which it may be developed.

The bones may be absorbed by its pressure, but they will never be involved; and the skin may be so stretched and attenuated by its distension as to ulcerate or burst, but it will never be infiltrated with the tumour's elements. This fact is well exemplified by a close examination of the margin of a cutaneous opening, the result of over distension; for it will appear as if cleanly cut, or rather punched, at its edges, and never thickened or diseased.

With the majority of the cancerous tumours, however, a very different condition has to be described, for a cancer has the peculiar property of freely infiltrating all the tissues upon which it presses, and when near the skin this becomes rapidly involved. As the tumour approaches the surface, the integument first appears to be drawn down to it, and afterwards as though glued to its surface. At a later stage the skin becomes infiltrated with cancerous elements, and to the finger feels firm, fibrous, or tuberculated, and when ulceration has commenced, the edges of the skin are palpably indurated, thickened, and infiltrated with cancerous products.

The contrast between these different conditions of integument in the two classes of tumours is most marked and very important, forming a most valuable means of diagnosis in the extreme stage of simple or malignant tumours.

Simple or innocent tumours affect the patient solely through their local influence, and have no tendency to multiplication in other tissues, nor to involve the absorbents with which they are connected. Cancerous tumours not only affect the patient through

heir local influence, but have a marvellous tendency to multiplica-ion in any part of the body, more particularly in the internal arts, and never exist for any period without implicating the ymphatics of the part with which they are connected.

This difference between the two classes of cases is most im-ortant, and forms a very valuable means of diagnosis even in n early condition of disease; for in a case of tumour, the ature of which is doubtful from both its local and general con-itions, the presence or absence of an indurated absorbent land (not an inflamed one) will weigh down the balance of oubt, and tend more strongly than anything else to solve the roblem; for it is as rare to meet with indurated glands in a imple tumour, as it is rare to miss them in a cancerous.—*Guy's Hospital Reports*, 1863, *p.* 212.

7.—ON THE RECURRING FIBROID TUMOUR.

By Thos. Bryant, Esq., Assistant Surgeon to Guy's Hospital.

The name given to this class of cases very accurately defines heir pathological peculiarities. They possess all the characters f the fibro-plastic tumour; but they possess one of the features f the cancerous, in so far as they have a constant tendency to eturn, after removal, either in the same place or in the neigh-ouring parts, even to many times. In the pathological chain f tumours they are therefore unquestionably connecting links etween the innocent and malignant growths. There is really othing very distinctive in their external character by which hey can be known. They are, perhaps, somewhat less dense han the ordinary fibro-plastic tumour, and are more rapid in heir growth. Microscopically, they also possess more of the ell element than the innocent form, these cells taking on the audate shape; but I know of no means by which a definite iagnosis can be made of such a growth. The more rapid the evelopment of a fibro-plastic tumour, and the more cellular ts structure, the greater appears to be the probability of its eing of this nature.—*Guy's Hospital Reports*, 1863, *p.* 246.

8.—ON EPITHELIOMA, OR EPITHELIAL CANCER.

By Thos. Bryant, Esq., Assistant Surgeon to Guy's Hospital.

In the last section a class of tumours (recurring fibroid) has een briefly illustrated, evidently forming a connecting link etween the innocent and so-called malignant growths; for it as been shown that they are not so innocent as not to return fter their removal, and not so malignant as to repeat them-elves in the internal organs, nor to affect the body through the ymphatics, nor infiltrate the parts with which they come in con-act. In the class of tumours we are now about to consider, it

will be seen that a further and more advanced step is taken towards malignancy, for these epithelial tumours have both a tendency to return in a part after their removal, and to affect the system through the lymphatics. In rare cases, also, they may be found in the internal organs. These tumours, however, always affect the skin or mucous membrane, and never originate in any other tissue, but they possess this feature in common with the more malignant cancers, that they have a constant tendency to infiltrate the parts with which they come in contact, and do not as has been already shown with the innocent tumours, simply separate them. They are the common forms of cancers found in the lip, tongue, œsophagus, vulva, clitoris, penis, and rectum; and may be described as the cancer of the skin.

Epithelial cancer is essentially an infiltrating disease; it is not, as the sebaceous and fatty, fibro-plastic and fibrous tumours, a distinct growth developed in the tissues and separating them, but it is, from its very beginning, an infiltration. It begins, as a rule, as a little wart or tubercle, and this gradually spreads; it may crack, fissure, or ulcerate, and when this latter stage has been arrived at, the careful examiner will at once observe its true character, for the integument forming its margin will be evidently infiltrated with the cancerous material, and will present the well-known indurated and everted edges, these appearances forming a marked contrast to the condition of integument which has been ulcerated or ruptured by over-distension in a simple or innocent growth, for these edges are never thickened, or infiltrated with new matter, unless it be with inflammatory products. As a local disease, this epithelioma may slowly progress for years, and cause little pain, inconvenience, or injurious influence. Five, six, eight, or fifteen years have passed away in some of the cases before me, ere advice was sought; and it may, indeed, continue for many years, and never affect the patient more than as a local disease.

Case.—Epithelioma of outer canthus of eye; excision.—A sweep, æt. 41, was admitted, March, 1860, with an epithelial cancer at the outer canthus of the eye, of eight years' growth. His health was good, and no glandular affection existed. It was excised by Mr. Poland, and recovery ensued.

Case.—Epithelioma of cheek; treated by caustics; recovery.—A fisherman, æt. 70, was admitted into Guy's, under Mr. Cock, in April, 1863, with a large cancer of the cheek, the size of a crown, and of six months' growth, the edges being very raised, thickened and everted. It was destroyed by the frequent application of a paste composed of equal parts of chloride of zinc and plaster of Paris. The man left cured.—*Guy's Hospital Reports*, 1863, *p.* 251.

DISEASES OF THE NERVOUS SYSTEM.

9.—ON THE THERAPEUTICS OF CONVULSION.

Dr. Charles Bland Radcliffe, Physician to the Westminster Hospital.

There is reason to believe that the diet in many cases of chronic convulsive disorder ought to contain somewhat more than an average quantity of oily and fatty matters, and somewhat less than an average quantity of lean meat.

There is reason to believe that gymnastic exercises are very beneficial in the great majority of chronic convulsive cases.

During the last three or four years I have seen several cases epilepsy, chorea, and hysteria in which undoubted good has sulted from the adoption of a regular course of suitable gymtic exercises; and the more I see the more I am satisfied t a course of this kind is a very important adjuvant in the atment of these and many other cases. I recall to mind more n one case of epilepsy in which the patient has said that he often warded off an attack which seemed to be imminent a bout at the trapezium; and I have at present a case under atment in which good seems to have been done by adopting practice recommended by Dr. Henry Silvester in the treatnt of consumption—a practice which may perhaps be brought ler the head of gymnastics. Having ascertained that the re dead weight of the arms hanging by the sides reduces the ount of air which might be taken into the chest to the extt of ten cubic inches or thereabouts, Dr. Silvester proposes t a phthisical person shall now and then eke out his insufent respiration by breathing in such a manner as to get rid this weight—by breathing, that is so say, with the hands ing hold of something fixed at a sufficiently high level, or, at answers the purpose still more easily, with the hands ped together and resting upon the top of the head. And proposition appears to have much to recommend it, not y in phthisis, but also in other cases in which, as in epilepsy, respiration is wanting in activity. I also think that a collral argument in favour of gymnastics may be derived from Silvester's investigations upon artificial respiration, for se investigations show that as much as from nine to fortyr cubic inches of air may be made to pass in and out of the st by merely pulling the arms upwards and then bringing m back to the sides, and that this movement of the arms is self a mode of performing artificial respiration which is more ctual than any other. Of course the beneficial influence of nastics is not confined to the respiratory function. On the trary, this influence tells equally upon the circulatory and

upon all other functions, as it indeed must do if it acts in this manner upon the respiration, for the activity of the respiration is a fair criterion of vital action generally.

There is reason to believe that the action of cod-liver oil is beneficial in the great majority of cases of chronic convulsive disorder.

Phosphorus is a suitable remedy in many cases of chronic convulsive disorder.

For the last four years I have used phosphorus in the majority of the cases of convulsion in which I have used cod-liver oil, and for the same reasons, and with the same results. I asked myself whether the fact set forth in the preceding table, that phosphorus is present in nerve-tissue, and that the amount of this ingredient seems to have some direct relation to the activity of the nervous function, being as much as two per cent. in adult life, and below one per cent. in infants and idiots, might not show that phosphorus is required as food by a weak nervous system—as much required, perhaps, as is iron in cases where there is a deficiency of red corpuscles in the blood; and this question, once put, seemed to require an answer in the affirmative. "In small doses," says Dr. Pereira, "phosphorus excites the nervous, vascular, and secretory organs. It creates an agreeable feeling of warmth in the epigastrium, increases the fulness and frequency of the pulse, augments the heat of the skin, heightens the mental activity and the muscular powers, and operates as a powerful sudorific and diuretic." In large doses, phosphorus, without doubt, is a caustic poison; in proper doses it produces the very changes which are necessary in epilepsy and in other cases of chronic convulsive disorder. In proper doses, and under the eye of a medical man, it is quite innocent of harm, and it may be productive of much good. This inference is that which may be drawn from what I have said; and this inference, so far as I can see, is not contradicted by experience. Given in the large doses in which phosphorus has been given in a few cases already on record, the good resulting may have been doubtful, very doubtful; but this experience is nothing to the point, for there is no reasoning in any case as to the effects of medicinal doses from the effects of poisonous doses. Given in medicinal doses I have seen enough to know that this remedy may be given, not only without harm, but with the unmistakable promise of real and substantial good. The form in which I first gave the phosphorus was the phosphorated oil of the Prussian Pharmacopœia, a preparation which is made by dissolving twelve grains of phosphorus in a fluid ounce of almond oil, by the aid of warm water. About four grains of the phosphorus is taken up, and the usual dose is from five to ten minims. I gave this oil always with cod-

ver oil, in a little orange wine, twice or thrice a day. In any cases, however, this mixture proved to be so nauseous at the stomach refused to tolerate it; and lately I have ten given the oil and the phosphorus separately, using the hereal tincture of phosphorus of the French Codex as the hicle for the phosphorus. I have given the oil with tolerable gularity so long as it seemed to be wanted, and the tincture w and then, especially when the symptoms called for a imulant. I direct one fluid drachm of the ethereal tincture be mixed with two fluid ounces of sulphuric ether, and preved in a capped bottle, the dose being half a fluid drachm to e fluid drachm, mixed with water at the instant of swallowing

In the ethereal tincture of phosphorus of the French Codex ur grains of phosphorus are dissolved in one fluid ounce of her, and consequently the strength is the same as that of the osphorated oil of the Prussian Pharmacopœia.

There is reason to doubt the suitableness of belladonna as a medy in many cases of epilepsy and other forms of chronic convulsive disorder.

I have for some time been in the habit of looking upon the latation of the pupil which results from the action of belladonna as an objection to the employment of this medicine in pilepsy, and in cases more or less akin to epilepsy; and my ief reason for so doing has been a growing impression that e alterations in the size of the pupil are due to vascular ther than to muscular changes in the iris, and that these terations furnish an exact index to the condition of the circution within the brain. I have, in fact, been led to agree ith those physiologists who look upon contraction of the pupil as being in great measure due to a state of turgescence the vessels of the iris, and upon dilatation of the pupil as eing to the same extent the consequence of an empty state of ose vessels. I have been led to do this, partly by thinking, did Bichât, that the pupil enlarges in the dark, not because ere is then an end to the "irritation" which had kept certain sphincter fibres in a state of contraction so long as they e acted upon by the light, but because the *iris* had passed out a state of expansion, which state was determined by the action the light—a view which brings the movement of the iris in e light and the movements of the cushions of the sensitive ant under similar circumstances into the same category; nd partly by reflecting upon the history of five cases of acute erebral meningitis which have been under my care during the st eighteen months. In these cases I saw the pupil contracted its utmost limit when the symptoms denoted unequivocal tive determination of blood to the head, and dilated before is state was developed and after it had passed off; and the

more I pondered upon these phenomena, the more I became convinced that the size of the pupil was dependent upon the condition as to fulness or emptiness of the minute arteries and capillaries of the brain; that, in fact, the pupil became contracted because the vessels of the iris participated in the arterial turgescence of the brain, and that the pupil became dilated because the vessels of the iris participated in the emptiness of the cerebral vessels. And I was also confirmed in this opinion by remembering that the pupil contracts when the eye and the whole of the corresponding side of the head become injected with blood as the result of dividing the cervical sympathetic in that side, and that the pupil dilates when this vascular injection is made to pass off by galvanizing the divided sympathetic above the line of section. In the dilatation of the pupil resulting from the action of belladonna, therefore, I have had what seemed to me a plain proof that this remedy produced an anæmic condition of the brain, and an equally plain objection to the use of this remedy in epilepsy and in any other cerebral disorder in which there is reason to believe that the brain and nervous system generally are in an anæmic rather than in a hyperæmic condition; and I can say, without any hesitation, that I have seen no such unequivocal good from the practical employment of belladonna in these cases as to lead me to disregard this theoretical objection. Upon this point, however, I may not have seen enough to enable me to form a sound conclusion.

There is reason to believe that opium may be a more suitable remedy than belladonna in some cases of epilepsy and in some other forms of convulsive disorder.

Opium differs from belladonna in causing contraction of the pupil instead of dilatation; and therefore, for the reasons set forth in the last paragraph, opium differs from belladonna in producing a hyperæmic instead of an anæmic condition of the brain, and in being suitable in cases in which belladonna is not suitable—in cases where the brain is anæmic rather than hyperæmic—in cases, it may be, of epilepsy among others. As yet, however, I have met with few cases in which I have thought it expedient to test the correctness of this theory by putting it in practice.

There is reason to doubt the efficacy of zinc as a remedy in epilepsy, and in cases akin to epilepsy.

I am disposed to look upon zinc as having an action upon the system which is directly opposed to that of iron. Iron, as all know, has an astonishing power of favouring the nutrition and multiplication of the blood-corpuscles. Zinc, on the other hand, blanches the system, and induces, before long, the state which was once known as *tabes sicca*, and for which no other

me has yet been devised. Zinc, indeed, exercises a peculiar siccating influence upon the system. Dr. Pereira mentions e case of an epileptic gentleman who took daily, upon an erage, twenty grains of oxide of zinc until he had swallowed 46 grains, and who at the end of this time was pale in the treme, sallow, wasted away, almost idiotical, with the tongue ickly coated, the bowels constipated, the inferior limbs cold d œdematous, the abdomen tumid, the arms cold and rivelled, the skin dry and almost like parchment, the pulse w, thready, and scarcely perceptible. This patient expe- nced no change for the better in his fits; but he soon reco- red from the effects of the zinc under appropriate treatment. ave also myself seen four cases, different from this one only being not quite so severe, and I have met with many cases which the prolonged use of zinc, in one form or another, has oduced decided sallowness and bloodlessness of the com- xion. I find also that brass-founders, who are exposed to e fumes of deflagrating zinc, are often dried up and wizened a curious manner. And Dr. Greenhow has recently shown, addition, that these men are apt to suffer, particularly in e afternoons of the days spent in the casting shop, from what called "brass-founders' ague"—a disease beginning with laise, tightness or constriction in the chest, nausea, repeated ors, ending in profuse sweating after a short and faintly rked hot stage. Here, then, is evidence that zinc is capable producing a form of convulsive malady—for rigor is a form such malady—as well as of producing the *tabes sicca* which been described.

There is reason to believe that alcoholic stimulants are the most stworthy antispasmodics in the prevention and treatment of vulsion.

The wider experience of the last four years has not shaken convictions upon this point. On the contrary, I do not member any one case in which there was not something to engthen these convictions. I have very recently seen a case aggravated chorea in which there had been no sleep for five rs and nights, and no cessation to the movements of any ment, in which a wineglass of port wine given every half ur, with an egg beaten up in the alternate doses, produced et and sleep in ten hours, and in which a continuance of the ne treatment, only in a less vigorous style, left the patient ll, so far as the chorea was concerned, in a week; and I could other cases, at least three, to the same effect. I could also many cases of epileptic and hysteric convulsion averted, or recurrence prevented, by means of a proper use of alcoholic nulants.

There is reason to believe that bloodletting, in one form or

another, may be permitted in certain cases of convulsion, in order to prevent certain consequences of the convulsion.

There is nothing in the pathology of convulsion to justify the notion that convulsion is likely to be prevented by bloodletting; but it is not difficult to understand that cases of epileptic or epileptiform convulsion may be met with in which the veins of the brain may be so gorged with black blood as to put the patient in imminent danger of apoplexy, and in which this danger may be somewhat lessened by abstracting a small quantity of blood. And possibly this may be no wrong practice in such a case. At present it is plain that past experience is too much disregarded in this matter. Why, it may well be asked, if moderate bloodletting be so serious a matter, should a woman require periodical bleeding to keep her in health? Nor must the astonishing power of multiplication belonging to the blood-corpuscles be lost sight of in this matter. Speaking of the rapidity with which an anæmic patient became convalescent in St. Mary's Hospital, Dr. Thos. King Chambers says—and what he says requires no further comment—"She weighs 8 stone, or 1792 oz.; of this $\frac{2}{7}$, or 512 oz., is blood; and of this blood $\frac{133}{1000}$, or 60 oz., should be red globules. Now, the analysis of MM. Andral and Gavarret show that in cases of anæmia of at all a marked character (as this was) we may expect at least three-fourths of the red blood discs to disappear; so that when she came into the hospital it may fairly be assumed that she did not possess more than 15 oz.; and now I think she may be assumed with equal fairness to have got up to 45 oz., which is conceding that she still wants a quarter of perfect health. By this she must have made 20 oz. of red blood-discs—that is the most important organic constituent of upwards of 150 oz. of blood—in a month!"

Therapeutically as well as pathologically there is, in fact, every reason to believe that the means to be employed in the treatment of convulsion are those which exalt, and not those which depress, vital action.—Lancet, June 6, 1863, *p.* 626.

10.—ON CHOREA.

By Dr. W. S. Kirkes, Assistant Physician and Lecturer on Medicine at St. Bartholomew's Hospital.

[It is now pretty well agreed that an inflammatory affection of the left valves of the heart, indicated by morbid sounds or excited action during life, or proved by structural changes after death, is a very frequent if not invariable accompaniment of chorea. Hence these questions arise—Does the chorea produce the affection of the valves? or does the latter lead to the former?

, again, are they both the result of some one common cause? . Kirkes inclines to the truth of the last, and considers that is brought about by the blood (previously deteriorated by the eumatic poison if it has existed) being rendered impure by the roduction of inflammatory products and fibrinous particles m the diseased valves. This theory explains the fact that the orea is an "almost invariable" attendant upon the state of the ves, whilst it may not occur at all in rheumatism only, or t for several months after its subsidence, and during the con- uance of valvular mischief only.]

There are strong grounds for believing that in chorea the vous system is, from hereditary tendency or acquired predis- ition, is an unduly susceptible state, also that this state of rbid irritability is connected with imperfect nutrition of the vous centres, and lastly, since the choreic phenomena result- from such nervous irritability appear to be often developed or at any rate closely associated with certain other functional organic disorders, such as mental shocks, disturbed digestive uterine functions, rheumatism, but, above all, with affections the cardiac valves, the indications for treatment become plain.

These are, first, to remove, if possible, and guard against recurrence of, such of the just-named sources of additional tation as may be detected, be they of nervous, digestive, rine, cardiac, or any other kind of origin. In case of tinct evidence, or even a suspicion of a rheumatic diathesis, plaining the attendant valvular disease, the alkaline treat- nt of rheumatism may be safely employed in conjunction h other measures. Secondly, to give tone to the debili- ed nervous system by promoting its more perfect nutrition. nce the great good of generous diet, cod-liver oil, special rine tonics, such as quinine, iron, zinc, and arsenic, in most ms of ordinary chorea. Hence, too, the great use of out- r exercise, gymnastics, and other methods of promoting vous and muscular activity, for by thus increasing the lthy discharge of normal function, healthy nutrition is t maintained and increased. These, and other general asures of a like kind, such as cold sponging, or the shower- h,—provided it be borne well, and does not overshock and hten, as it very often does,—are applicable to nearly all ms of chorea, and are often sufficient to promote their cure. t when we have to deal with the acute and violent forms of s disorder, additional means have commonly to be adopted. e chief object, then, must be to put a stop as speedily as sible to the violent involuntary movements, and to the endant sleeplessness, for if these continue long they tend ost certainly to kill by exhaustion, hence the indication,

thirdly, to tranquillise the highly excited nervous system, and procure sleep. Nothing appears to accomplish this so readily as the use of opiates, combined with diffusible stimulants. Opium, morphia, or henbane, with ether or ammonia, in doses proportioned to the age of the patient, the degree of effect they produce, and the violence of the symptoms, and repeated at regular intervals, will often in a few hours mitigate the violence of the choreic movements, and in a few days lead to their almost complete removal. In the more furious examples, however, injections of laudanum into the bowels, repeated inhalations of chloroform, or the subcutaneous introduction of a solution of morphia, may be advantageously substituted for, or adopted in conjunction with, the preceding. In addition to these sedative measures, the employment of wine, or, in the more urgent cases, even brandy, often seems to be remarkably productive of good. The benefit resulting from this combined opiate and stimulating plan seems to prove, as before remarked, that the nervous excitement on which the choreic movements depend is in great measure the result of exhaustion; the opiates allay the excitement, and the stimulants counteract the exhaustion and retard tissue change, while, at the same time, the rapid waste of nervous energy occasioned by the involuntary movements and prolonged sleeplessness is greatly reduced thereby. Meanwhile, measures for repairing this waste and restoring the nutrition of the nervous centres can also be employed. Good nourishing food, with a liberal allowance of meat, eggs, and milk, should be given. Quinine, iron, zinc, or arsenic may also be administered simultaneously with the opiates and stimulants. A review of the treatment of the most violent forms of chorea recorded by others or treated by myself, has convinced me that the most successful and most speedily cured cases are those which have been treated on such a plan as that just advocated.—*Med. Times and Gazette, June* 27, 1863, *p.* 664.

11.—ON THE INHALATION OF OXYGEN, AMMONIA, AND BROMOFORM IN CASES OF EPILEPSY, SPASMS, AND PARALYSIS.

From cases under the care of Dr. Ramskill, at the Hospital for the Epileptic and Paralysed.

Dr. Ramskill has lately been renewing his investigations on the administration and inhalation of oxygen in the treatment of various chronic forms of paralysis, of spasm, and epilepsy, also of the action of ammoniacal vapour and of bromoform in the same diseases, the last having especial relation to shortening actual attacks of epilepsy, as well as to preventing them.

The following is a brief history of the first case:—Nearly two years ago the son of a chemist, 23 years of age, applied to the Hospital for the relief of what was diagnosed as syphilitic epilepsy. He had contracted syphilis two years before; had treated himself by the free use of mercury, chiefly blue pill and opium; secondary and tertiary symptoms succeeded; these were apparently cured by the iodide of potassium, but he was leaft weak, wasted, and cachectic. Eight months prior to his application, after exposure to cold and wet, he was attacked with headache, worst on the right side, and with some vertigo; these symptoms did not yield to treatment, and the iodide did not alter them. The dose never exceeded five grains. After a fortnight's suffering he had a succession of five epileptic fits, having an interval of a few minutes between each. The head symptoms then became much relieved, but he had a renewed attack of a batch of fits every fourteen or sixteen days, varying in severity, and occasionally leaving a temporary paralysis of the left lower extremity.

He was tall, very thin, of gaunt, dark aspect; his face was covered with acne of a livid, and suspiciously tinted colour, and he had several large boils about the back of the neck, which had been caused by blisters, frequently applied, with a view of preventing his fits. As he was a tolerable manipulator, according to his own account, in practical chemistry, it was suggested by Dr. Ramskill that he should make oxygen gas, and inhale it twice or three times daily, stopping the inhalation only on the accession of giddiness or other uncomfortable symptoms, and that he should continue the iodide of potassium in the same dose as he had hitherto taken, viz., five grains twice daily in sarsaparilla.

The result was that the cachectic aspect began to disappear, the boils vanished, and at the end of three months he reported having had only one series of fits, and those of a very light character. He had recovered a healthy aspect. Lately he was accidently met with looking in perfect health, and he stated that beyond the one series of fits, he had not suffered from an attack for sixteen months.

The treatment at present pursued by Dr. Ramskill consists, for children, in the inhalation of atmospheric air drawn through a glass inhaling apparatus one-third full of solution of peroxide of hydrogen. The solution must be highly charged with oxygen, or the gas is not given out with sufficient freedom. The inhaling apparatus is also gently agitated by an attendant during the process, and a hot moist cloth kept wrapped round it. The inhalation is continued until some sensible effect is produced on the pulse or on the feelings of the patient. The slightest feeling of giddiness is considered a sign of sufficient action. Some

children appear quite insensible to such a quantity of oxygen as the solution throws off; in these cases bladders containing the pure gas are substituted. In either case the peroxide of hydrogen is given internally.—*Med. Times and Gazette, July* 4, 1863, *p.* 11.

12.—ON THE TREATMENT OF DELIRIUM TREMENS BY DIGITALIS.

By Dr. J. W. M. Miller, Physician to the Royal Portsmouth Hospital.

[The following remarks are appended to a case of delirium tremens treated by digitalis.]

What is the value of digitalis in delirium tremens? This is a question still *sub judice*. It is now three years since the late Mr. Jones, of Jersey, brought his experience and views before the profession. In his hands the remedy appeared almost a specific; for out of seventy cases of the disease, sixty-six recovered without any other remedy. At first, this novel treatment received much favour, and digitalis was vaunted by many as a true antidote for alcoholism; however, its reputation has not been maintained. It has received an extensive trial from many practitioners in all parts of the country; and it is my opinion (judging from the cases which I have collected from many sources, as well as those which have happened in my own practice) that, although digitalis is an useful remedy as a calmative, and possesses some advantages over opium, still it has no peculiar power over the disease itself. It does not cut short the attack by inducing sleep at once. Its action is directly upon the nervous system as a calmative, and soporific; at the same time, it stimulates the heart and augments its contractility. When it is given in large doses, there appears to be but little risk of increasing cerebral congestion and producing profound coma; and, therefore, it is especially indicated in those cases in which inflammation of the brain is threatened, and where the administration of opium would be attended with danger.—*British Med. Journal, Sept.* 5, 1863, *p.* 265.

13.—CASE OF TRAUMATIC TETANUS.

By Dr. John K. Barton.

Tetanus, always an interesting subject, is rendered doubly so at present by the fact that nicotine, first proposed as an antidote to strychnine, is now on its trial as a remedy for it, the question to be decided being, whether it has or has not the power to stop this terrible disease, or even to stay its progress.

The following case has the additional interest attaching to it, that the patient was a medical student who had all but completed his curriculum, and was in consequence well known to many members of the profession, as well as to a large body of his fellow-students. It is well that the particulars of this case should be recorded, for some perhaps hearing of its rapidity and fatal termination, might hastily conclude that nicotine was quite powerless in such cases; or others, hearing vague accounts of its mode of administration, might infer that it had not been rightly employed or fairly tested. Accurate notes having been kept by those who watched by the sufferer day and night, both the action of the remedy and the progress of the disease can be alike plainly seen. Before entering on the details of the case, I should premise that the patient had been well known to me for several years; he had been under my care three or four times for palpitation of the heart, irritable dyspepsia, &c. He was of a very sensitive nervous temperament, odd, silent, and old-looking. Knowing the weak, irritable constitution we had to deal with, it was no surprise to us who knew the patient, that when the terrible disease of tetanus seized him, he should fall an easy victim in spite of every effort to save him.

Mr. W. H., a medical student, twenty-two years of age, had been reading for some months very hard for his medical examination, which he expected to pass in about a fortnight. Upon Monday, June 1, 1863, being in the College park, he joined some fellow-students in exercising on a trapeze which had been erected there for gymnastic practice. While thus engaged Mr. H. fell, it is not known exactly how, but he was severely stunned, so that those about him thought his neck was broken. Dr. Bennett, who was in College at the time, saw him immediately. When he came up he found him lying on the ground, evidently still under the shock of the accident. The only injury he had received was a compound dislocation of the metacarpo-phalangeal articulation of the right little finger; the dislocation had been reduced by one of his fellow-students. When Dr. Bennett examined it he found a lacerated wound between the little and ring fingers, extending about an inch and a half along the back of the hand from the cleft between these fingers; there was no bleeding. As soon as he had sufficiently recovered from the collapse he was removed to his lodgings, which were situated close by. Dr. Bennett saw him daily; everything appeared to be going on very favourably. On Wednesday there was considerable œdema along the back of the head, and matter seemed to be forming; this, however, disappeared towards the end of the week. He was out each day as usual; his only anxiety being how he could manage at his approaching examination, as he feared he would not be able to

write by that time. Upon Saturday morning Mr. H. felt poorly and depressed, and said to his friend, Mr. Pierce, who was living with him, that he had a presentiment he was getting tetanus; his friend laughed at him, as he could give no reason for this feeling. Dr. Bennett saw him that day, and finding him depressed about himself, and complained of wandering pains everywhere, asked him had he sore throat; he said not; then, while talking to him of something else, he passed his hand over the muscles of his neck and jaws, all which felt soft and pliable. During Saturday Mr. H. attended the University foot races, and walked about the park for three or four hours. He was noticed walking quickly and uneasily about by himself, his wounded hand thrust into his coat, with an anxious depressed look, the sports appearing to afford him no entertainment. He eat his dinner apparently with appetite, Mr. Pierce having seldom seen him eat so heartily. Immediately after dinner, however, Mr. H. began to complain of feeling his jaws stiff and of a severe pain in his neck, and at the same time he seemed very nervous and anxious about himself. His complaints and anxiety increasing very much as the evening advanced, his friend proposed going for me, as he did not know where to find Dr. Bennett then. Mr. H., however, starting up himself came off to me. It was seven o'clock in the evening when I saw him; he complained then of a severe constant pain in the back of his neck; said he could not open his mouth, and was evidently very nervous about himself. When asked to put out his tongue he protruded it half from his mouth, but said he could not possibly open his mouth any wider. No rigidity of any muscles could be felt except the masseters which were holding the mouth closed; whether this was involuntary, the result of nervous excitement in one whose mind was alive to every symptom of tetanus, or whether it was in truth the first symptom of the terrible disease itself was the question. His pulse was not above 80 and natural. In answer to his inquiries, I told him that of course his symptoms must excite suspicion of tetanus, but that it was not certain yet. As he stated his bowels were confined I prescribed a pill of calomel and aloes to be taken immediately, and sent him home to bed, promising to see him again in the evening. His appearance at the time was not what we are accustomed to call tetanic. The eye, although anxious, had not as yet that peculiar peering expression which we attribute to the disease. Having despatched a messenger to Professor Haughton requesting him to meet me early next morning, and give me the benefit of his advice and experience in administering nicotine if it became necessary, I found Dr. Bennett and we were soon by our patient's bedside, we found him lying on his back, his knees drawn up; pulse 92, full. He com-

plained very much of the pain in the back of his neck. He had taken the pills, but said he found great difficulty in swallowing them. When his attention was directed to them, the muscles of his neck felt somewhat rigid, but when diverted to think of something else they were relaxed. The prominent symptoms were excessive nervous excitement and partial closure of the mouth. The fact of our patient being a medical student, of a very nervous temperament, left the diagnosis still uncertain. We agreed that under the circumstances we would not be justified in giving him nicotine then. We spoke as cheerfully as possible to him, and ordered a tumbler of warm brandy-and-water with a teaspoonful of chloroform to be given him at once; a warm poppy-head stupe was at the same time applied to the neck where he complained of the pain. Next morning (Sunday) we met soon after nine o'clock, Prof. Haughton being with us. Mr. H. had passed a restless night with occasional broken sleep, constantly moaning. His head was bent back; his chin projecting up, as he lay; his jaws firmly clenched together; unable to separate his teeth at all; the muscles at the back of the neck felt rigid; the sterno-mastoids were still soft; his face had now the fixed tetanic look; the eyes peering and ferretty; the abdomen was still soft. The reality of the disease was now but too plain, and the rapidity with which the symptoms had advanced since the evening before, warned us that not a moment was to be lost. As pain in the neck was still very badly complained of we determined to begin by giving him twenty drops of liq. opii. sed. at once before commencing the administration of nicotine, which had to be sought for, as that which Professor Haughton had himself manufactured was made so long that he did not like to depend upon it. At eleven o'clock Dr. Hutton saw Mr. H. with us; the symptoms had advanced very markedly since nine o'clock, the abdomen was now as hard as possible; the head bent forcibly back; the sterno-mastoids were also now rigid. Dr. Bennett had attempted some time before this to administer the opiate we had agreed to give, but the moment our poor patient made an attempt to swallow a few drops of the liquid a spasm of the glottis came on, accompanied by marked stridor, and such fearful distress that nothing could induce Mr. H. after this to attempt to swallow anything, even the mention of swallowing some fluid later in the day brought on a spasm. Dr. Hutton looked upon the case as one which, judging from the rapidity with which the symptoms had advanced up to the present time, would be surely and rapidly fatal. He agreed with us that an attempt should be made to give nicotine by the rectum, and advised that chloroform should be constantly inhaled to relieve pain and spasm. Up to this time our patient had no general

paroxysm of spasm. Some fresh-made nicotine having been obtained from Messrs. Bewley and Evans, by Professor Haughton, the first dose was administered at ten minutes to twelve; it consisted of two drops of nicotine with a full tablespoonful of brandy and about a wineglassful of warm water; a little of this was lost in the administration, so fully two drops was not given. The effect produced was very marked, the pulse rose in two or three minutes from 92 to 130, and at the same time a copious drenching perspiration broke out over the whole body. I had kept my finger on the pulse constantly since the dose was given, and felt it rapidly losing in fulness and strength as it increased in frequency. However, after a few minutes it recovered itself, its volume becoming good again. It seemed to me that the brandy administered with the nicotine prevented its depressing influence being felt too much. As these effects of the drug were produced the patient experienced some relief of his most urgent symptoms. He said he felt the pain better, and he thought his jaws were looser. At the same time he said he felt an extraordinary feeling of confusion in his head, while his perceptions remained perfect as before. The pulse gradually fell after the first quarter of an hour, so that at the end of an hour it was 108. The first severe paroxysm occurred about a quarter of an hour after the first dose was given, and while the effects I have been describing were being observed, it began, apparently at the glottis, the first notice of its approach being frothing at the mouth with lividity of the face; the opisthotonos was not intense, the head being dragged back as it were into the pillow, and the leg stretched out. We had intended giving two drops of nicotine every hour, but on account of the great effect produced by the first dose we determined to give but one drop. At one o'clock the second dose, consisting of one drop of nicotine, brandy, and warm water, was again injected into the rectum, this time without any loss.

The effect of this was much less marked than those produced by the first; there was no confusion of head complained of, but the sweating continued; there was no immediate effect produced on the pulse. This dose was repeated every hour until five o'clock in the afternoon, the pulse coming very gradually down. It was 108 at one o'clock; at half-past two o'clock it was 104; at half-past three o'clock 100; and at five o'clock 96. Since the first convulsion, which occurred soon after the first dose was given, there had not occurred any so severe, but there was an almost constant twitching at the back of the head, and about every six or eight minutes a more general spasm, with laryngeal distress and frothing of the mouth came on. At this time Dr. Hutton saw him again in consultation, and agreed with us that he had lost no ground during the day. He advised the con-

tinuance of the nicotine. Prof. Haughton being of opinion that it ought now to be given in two-drop doses every hour, this was done, it being combined as before with brandy or brandy and beef-tea, until eight o'clock in the evening, when he complained of some sickness of stomach, and the enema which had just been given came away, being the first which had shown any inclination to do so; he at the same time said he thought the bowels would be moved shortly. The improvement already noticed had certainly increased since five o'clock; there had been no bad fit; his pulse was hot, 92, and his bowels were freely opened at half-past nine o'clock, no fit being produced by the necessary movement. Prof. Haughton was now of opinion that the full physiological effects of nicotine were produced, the smell of snuff was now perceived by him from the patient. As it would have been unsafe to carry on the dose as rigorously as we had hitherto done, now that the full effects of the drug were produced, we determined to give, during the night, two drops every second hour; at half-past ten this was given and retained, the bladder being emptied shortly afterwards without instrumental aid. At half-past twelve o'clock, when the next enema should be given, he seemed restless, had had two attacks of convulsions in quick succession, and his pulse was rising, being now 108. The enema was followed by another convulsive attack. Two advanced and intelligent fellow-students of Mr. H. had undertaken to carry out the treatment during the night. Dr. Bennett saw him at half-past one o'clock, and then gave chloroform, as the convulsive attacks were more violent than they had been, and more frequent. At four o'clock Mr. Vesey came for me, finding the pulse very rapid, and the paroxysms more frequent and violent. When I saw him soon after this, I found a remarkable change had taken place since eleven o'clock the night before, when I had last seen him. The head was no longer kept constantly and forcibly bent back, but in the intervals between the paroxysms lay naturally on the pillow; the mouth could be opened half an inch, the legs no longer were bent up as they had been, but were straight and stiff; the foot-board of the bed being broken by the violence with which during the paroxysms it had been struck by his feet; the pulse was 130, and full. When the paroxysms came on which was the case soon after I entered the room, I noticed it did not appear to begin as before at the throat, but at the diaphragm, for he placed his hand on the epigastrium, crying out, "very tight here, very tight here." The paroxysm was preceded by a tremor of every muscle of the body, and invariably accompanied as it had been from the first with the ejection of a quantity of frothy mucus from the mouth. I began immediately again to give chloroform drop by

drop upon a fold of lint laid over the mouth, with marked relief, as long as it was actually being inhaled; at about five o'clock I gave an enema of two drops of nicotine as before. It appeared, however, to me that it was no longer exerting the marked influence it had done in controlling the disease; it appeared now as if it was producing no effect whatever; the pulse 130; the skin no longer perspiring; the paroxysms of convulsions increasing in violence and frequency, except so far as they were restrained by the inhalation of chloroform, which was not carried far enough to make him at all insensible, but by keeping a single fold of lint slightly wetted with it over the mouth, great relief was afforded; if it was removed for more than a minute or two, he made earnest signs to have it again. At eight o'clock his pulse was 130, still full; paroxysms very violent; restrained in frequency by chloroform. He could now open his mouth and swallowed very slowly a teaspoonful of brandy; at ten o'clock he had a very violent fit, beginning with a kind of general tremor of all the muscles; the glottis seemed to be completely closed for some time; the face becoming of a dark purple; it opened, however, before he was quite exhausted, and the air entered the trachea again with a loud stridulous sound. His pulse continued to increase in frequency, so as with difficulty to be counted. Respiration very rapid and laboured; paroxysms although restrained by the chloroform were occurring with increasing violence.

The mental faculties were perfectly clear to the last, and throughout the senses of hearing and sight seemed to be rather more acute than natural. At ten minutes past twelve he breathed his last, the immediate cause being another violent fit, such as I witnessed at ten o'clock. Before the spasm of the glottis relaxed, life had ceased, just forty-eight hours from the time when he himself first felt the premonitory feeling of the approaching disease, and not more than twenty-four since the first dose of the nicotine was given.

In this case it will be seen the earliest symptom was noticed upon the sixth day after the receipt of the injury; from this the disease very rapidly advanced, so that upon Sunday morning, the seventh from the receipt of the injury, the disease was rapidly hastening to a fatal termination. Nicotine was then administered, and the symptoms remained without any advance, at least for nearly twelve hours; the full effects of the drug seemed then gained, and at the same time the improvement which had taken place was at its height. From this time the disease advanced, the drug appearing unable to check it. One very remarkable feature in the case was the change which took place in the groups of muscles affected. At four o'clock on Monday morning his head was no longer bent back to the

extent it had been, and his mouth admitted being opened somewhat, and shortly after he swallowed some fluid. At the same time, his legs, which had been kept flexed and separated from one another, were now straight and drawn close together, while the abdomen was very hard, and very severe pain complained of at the epigastrium, the diaphragm being evidently engaged more than it was before.—*Dublin Medical Press, July* 1, 1863, *p.* 1.

14.—ON THE THERAPEUTIC INFLUENCE OF PHYSIOLOGICAL REST IN PERICARDITIS AND OTHER INTERNAL DISEASES.

By JOHN HILTON, Esq., F.R.S., Surgeon to Guy's Hospital.

[We may fairly assume that friction upon the two free and inflamed surfaces, as in early pericarditis, must add materially to the local mischief. Hence Mr. Hilton assumes that the physician's first anxiety should be to quiet the action of the heart, and thus to moderate the friction and its ill effects. The treatment usually adopted with most success is founded really on this principle. Venesection, antimony, and digitalis act chiefly by their indirect effect in quieting the cardiac action.]

Let us say that the *origo mali* or the *vera causa* of the pericarditis, not traumatic, is, or may be, a morbid condition of the blood antecedent to the local inflammation; so that the local inflammation is to be considered only as a local manifestation of some general and diffused cause, in which the pericardium has unfortunately, in this instance, been selected; and we know that if the latent general cause, whatever it may be, be not successfully displaced by medicine or spontaneously exhausted, then the local inflammatory effusion of coagulable lymph becomes so accumulated round the oppressed heart that its rhythmical power is overwhelmed, and it ceases to act, thus closing the case with death.

With a view to the full and further appreciation of rest in idiopathic pericarditis, let us admit, for the sake of argumentative illustration, or of what I believe to be the right interpretation, that the effusion of lymph in this pericarditis results from the pathological element which was in the blood, and that the morbid condition of the blood has been exhausted by the inflammatory pericardial effusion, or that it has been eliminated by nature through some emunctory—kidney or some other organ—aided by medicine. May we not discover, I say, some good in the solid plastic effusion itself? I think we may—in the induced rest.

What is the mechanical influence of the effused lymph (which

may or may not glue the two pericardial surfaces together) upon the serous surfaces, which are not only secreting but also absorbing surfaces? For it must be borne in mind, in anticipation of what I shall presently remark, that serous membranes are rapidly absorbing organs, very rapidly absorbing organs indeed. If the opportunity should be offered me, I hope to be able to adduce facts to show that the nervous depression which we term collapse, associated with laceration of the intestines, depends actually upon the absorption of some of the morbid fluid extravasated from the intestinal canal into the peritoneum. That absorption is one of the causes of collapse or nervous shock which is not usually considered in that light, but it has a very important bearing in practice; and I have no hesitation in saying, from both clinical observation and experiment, that these serous membranes are very rapidly absorbing organs. Observe this illustrative case of absorption by the peritoneum. Suppose a person has a injury to the abdomen, which causes an extravasation of a large quantity of blood into the peritoneum. This blood consists of a certain amount of serum and coagulable blood. Now, if the patient survive but a few hours, what do you find in the abdomen after death? No serum; every drop of it is gone. Gone where? All of it is absorbed. The clot of blood remains, but the fluid part of it has been taken up.

The result of the effusion of this inflammatory fluid is, that the serous surfaces become defended immediately from direct and intimate surface-friction; thus that possible source of irritation or local excitation is removed. Thenceforward this acquired rest, or freedom from direct friction, enables the serous membrane to recover itself by rest, and then to resume its not less important function of absorption. What I wish to convey, in a few words, is, that when effusion takes place upon the surface of the pericardium, that pericardium for a time is undoubtedly kept in a state of rest: it does not secrete any more fluid, and it recovers itself. This is precisely what happens in different parts of the body. For example, in the case of croup, when effusion of lymph takes place, the false membrane adheres for a time to the mucous membrane; the mucous membrane thus obtains a physiological rest, and the little glandular structures, imbedded in the submucous tissue, recover their strength through their physiological repose. They then renew their function of secretion, and pour out pus and mucus, and thus detach the false membrane. I think I might with reason compare (in relation to the subject of rest) the rapid effusion of lymph in pericarditis to the extreme callus formed by nature in cases of bad fractures. There is no doubt that the longer the inflammation of the pericardium continues the more unhealthy the membrane becomes, so that if inflammation of the peri-

cardium becomes chronic or enduring, the pericardium acquires such an unhealthy condition that it will not perform its second function of absorption; and patients so affected are those who die with a large quantity of fluid in the interior of the pericardium, constituting dropsy of the pericardium. Thus if fluid be poured into a healthy pericardium, it is rapidly absorbed; if into a very unhealthy one, no absorption takes place: hence occur those dropsies that we so often see.

In pericarditis, with solid effusion, the original disturbing cause being removed (or having subsided by the general or constitutional treatment), we may affirm that the effused lymph has not only mitigated the local disturbance, but has been also the starting point of the local recovery, simply by preventing that irritation which otherwise occurs in the rubbing of the two inflamed surfaces upon each other, and by giving them absolute rest both mechanically and physiologically; so allowing the serous surfaces to resume their function of absorption, and to eat or drink up the temporary splint which had been poured out between them. For there is no doubt that solid effusion has been known to exist during life between the pericardial surfaces, recognised by certain diagnostic sounds which have subsequently ceased; and the patient dying some time afterwards, the post-mortem has proved that the whole of the lymph had disappeared, or had been absorbed.

We observe this same curative principle of acquired rest displayed in other parts of the body when suffering from inflammation, as will appear when I refer you again to the occurrence of solid effusion (callus) associated with the repair of some fractures of bones, and of the massive swellings which we see encumbering the exterior of inflamed joints, whether in cases of acute or of chronic destructive inflammation of the interior of a joint; the joint still, perhaps, going on to repair. When a cylindrical bone is fractured, what do you discover upon the exterior of the fracture, especially when the fractured pieces are not nicely adjusted, or are subjected to frequent local disturbance? We know that nature herself puts a splint upon the exterior of the bone, including the fracture, for the purpose of keeping the fractured ends of the bone in actual rest, and that in truth this external splint is developed in relation to the necessities of the individual case. In a badly adjusted fracture, which is unavoidably a good deal distorted, or one in which the fractured ends are moveable upon each other, the callus or temporary splint is greatly augmented to meet the greater requirements in that instance for the insurance of mechanical rest; whilst in fractures not much disturbed and nicely adjusted, there is no external callus, only that internal soft callus which is interposed between the fractured ends of the bone.

But to revert to the subject of nerve-distribution. I might easily spread it out by showing the relation of another serous membrane—viz., the arachnoid membrane—to the fifth nerve (a nerve of sensation) and the facial or motor nerves of the face, and fix upon it some important points in practice; but time would not allow me to do justice to the illustrations, hence I must defer it to some other occasion.

Having examined the nerve-distribution associated with the joints and serous membranes, and pointed out some of its results as evidenced in the pathological symptoms induced by it in the diseases of those parts, I purpose now to consider briefly the same anatomical and functional arrangements as they are manifested in the mucous membranes and their directly-associated muscles. Let us look, for instance, at the conjunctiva, the orbicularis palpebrarum, and the skin covering the eyelid, in their due anatomical and physiological relations. These parts stand very much in the same relation to each other as the synovial membrane of a joint, the muscular apparatus moving that joint, and the skin over the insertions of the muscles. Thus we find that the facial nerve is one of the motor subdivisions of the great cranial compound nerve constituted by the large origin of the fifth nerve, as the sensitive root, and the third, fourth, fifth (motor portion), sixth, and seventh cranial nerves, which together form the motor roots of this cranial nerve; the whole of this nerve-association structurally resembling a common two-rooted spinal nerve. The sensitive root of the fifth nerve supplies the conjunctiva and skin with sensation, and the facial nerve supplies the orbicularis palpebrarum, the muscular apparatus, with motive power: these two nerves are most intimately associated both anatomically and physiologically; hence the constant and active sympathy between these parts. Now notice what happens when the eye is inflamed, or the light is too strong for the eye. The eyelids are immediately closed—the eye is placed in darkness, which is the eye's "rest." What a simple observation is this! how important in its relations, how widely applicable to general professional practice, is the law here exemplified and expressed! Here is an indication, a symptom, a typical expression on the part of nature which has been visible to mankind from one generation to another, and soliciting as it were apprehension; yet how little is it appreciated, how rarely made the guide to practice! Surely the neglect of such an indication is a great error, and requires correction. If the eye be inflamed (painful, irritable, red, congested, very sensitive) by exposure to a strong, glaring light, or to intense heat, immediately the eyelids are closed instinctively, thus adopting the principle of rest as a means to restoration. Tears are secreted, analogous to synovial

secretions in joint inflammations, to lubricate the conjunctival membrane, to interpose a layer of fluid between the globe and eyelids, to prevent direct friction of the two mucous surfaces, and possibly to foment the eye. If the eye be thus kept in temporary darkness, free from friction, and thus rested, it will return in a few hours to its normal state without any other aid. The restoration of the eye to its healthy state is complete; thus making manifest the great power which nature possesses of rectifying and controlling the morbid effects of inflamed structure or deranged function by rest.

It is certainly a curious, interesting, and most instructive fact, and well worthy of distinct notice here, that the portion of the body in which nature displays most conspicuously her immediate appreciation of the value of rest in relation to its restorative power is the organ of vision—the part of the human body, be it remarked, the most completely under the fullest observation of the surgeon, with the least amount of trouble to him, and where he may see most graphically expressed the evidence of the good to be derived from rest to the diseased or injured organ. The recuperative law of nature is in this instance unwittingly admitted, and its appreciation generally, if not universally, acted on in practice; for I suppose every living professional man of every grade, of every age, whether his intellectual acquirements be great or small, would advise the exclusion of light from an inflamed eye, which is in reality perfect rest to the organ, by removing its natural stimulus, and which in excess becomes a great source of excitation. This rest to the eye as a curative agent is instinctively adopted by nature, and it is also (as a matter of experience, if not the result of reason or reflection) constantly adopted by surgeons in their treatment of injuries or diseases of the eye. But I must add as a stigma and an opprobrium upon the mental perception of some of us, that although we recognise the law and the principle as applicable to the eye, we do not appear to see it so clearly, and certainly do not act upon it with the same fixed notions and the same precision, in its application to the other parts of the body when suffering from accident or disease. If the eye be inflamed, the first thing that happens is that the eye becomes placed in darkness in a dark chamber. Nature closes the shutters so as to exclude or intercept the rays of light, in order to give the eye rest, and for no other purpose; and all this is done automatically or instinctively. Well, if you admit darkness as necessary or important in the treatment of diseases of the eye, you will be compelled to admit as a principle the therapeutic value of rest in the treatment of diseases of the joints, and indeed in all inflamed parts.

Observe the effect of morbid action in another portion of the

mucous membrane, in order to mark this same nerve-distribution. If you have an inflamed throat with inflamed tonsils, are you not constantly swallowing, in spite of yourself, and producing pain in the throat which you would be glad to avoid? What is it that incites this involuntary act of deglutition? It is an irritated or inflamed condition of the mucous membrane of the pharynx and palate which excites the associated muscular apparatus through the medium of the glosso-pharyngeal nerve and the pneumogastric nerves. You are constantly forcing and rubbing the inflamed tonsils, pharynx, and palate upon each other; and thus "swallowing" is excited frequently and painfully and against your will. This is exactly the same thing as irritation or inflammation of the synovial membrane producing contraction or spasm of the muscles moving the joint. This kind of case is best relieved by the local application of opium—by painting the throat with a solution of opium.

I saw not long ago, with Dr. Herbert Davies, of Finsbury-square, a gentleman who could scarcely swallow at all, for directly he put fluid into his throat it produced a violent and choking spasm. He was then nourished by nutritive enemata. I saw him endeavour to swallow fluid, but he nearly choked himself. I touched his throat with a camel's-hair brush, and a violent spasm was produced in the pharynx and larynx. Numerous and different gargles, weak and strong solutions of nitrate of silver, had been well employed, but without any advantage, and the patient was rapidly emaciating. I advised the use of a powerful anæsthetic to the irritable mucous membrane. I requested him to use a gargle containing prussic acid, and to swallow some of it. From the first time he adopted this plan of treatment he began to improve, and ultimately recovered. This application of prussic acid was adopted on physiological principles, merely for the purpose of reducing the sensibility and irritability of the mucous membrane, and of putting an arrest to the associated muscular spasmodic contraction. Subsequently this patient went to Hastings, and there the pharynx was painted with a solution of chloroform, upon the same principle of inducing physiological rest to the throat, and he got quite well.

Now take the larynx for illustration. Both the sensitive and motor nerves to the larynx are derived from the same pneumogastric trunk, and hence we note that any irritation or inflammation existing upon the mucous surface of the larynx or of the laryngeal surface of the epiglottis induces excited muscular action immediately on the part of the associated laryngeal muscles. This irritable state of the larynx is usually treated by the local application of nitrate of silver, in solution, or in

the form of a very fine powder, which is blown into the larynx; and the relief is sometimes very complete and speedy, by the physiological rest which it gives to the mucous membrane. I apprehend that rest is accomplished by the nitrate of silver acting upon the mucus and albumen, forming a solid albuminate of silver, constituting an adherent temporary covering to the mucous membrane; thus giving it rest by defending it from the atmospheric air, and so destroying for a time that nervous irritability and muscular contraction which produce a sense of suffocation. So, after all, the engendering of physiological rest is the curative principle, based upon the fact that the same trunk nerve supplies both the mucous membrane and the muscular apparatus of the larynx.

With regard to the epiglottis itself, I would remind you that its anterior or glossal surface derives its nerves from the glossopharyngeal, by which it, as well as the posterior third of the tongue, is associated with the pharynx preparatory to deglutition. This principle of nerve-distribution obtains throughout the whole distribution of the pneumogastric nerve—viz., the same trunk of nerve supplies the mucous membrane and the associated muscular apparatus. So it is with respect to the intestinal canal; the mucous membrane and muscular walls are supplied by the same nerves, causing direct sympathy between them. I have no doubt in the world that the effect of most purgative medicines is to induce irritation and increased secretion from the mucous membrane, and increased muscular contraction in the walls of the intestines; and I must express my conviction that the frequently-repeated introduction of irritating medicines into the bowels is very likely to do a great deal of injury by exciting muscular contraction, and thence diminishing the calibre of the gut; and that subsequently a great length of time, with carefully-managed diet, is required to replace the intestines in a perfectly healthy condition. Purgative medicines are, to my mind, in this respect, very often injudiciously administered for a continuance.—*Lancet, July* 25, 1863, *p.* 89.

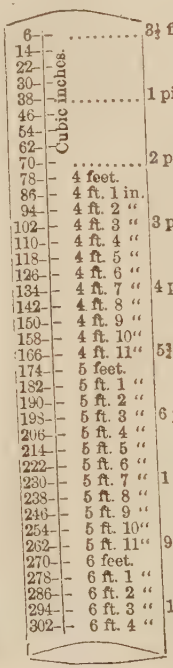
DISEASES OF THE ORGANS OF CIRCULATION.

15.—A CHEAP SPIROMETER.

By Dr. W. E. Bowman, Editor of the Canada Lancet.

A cheap spirometer may readily be made from two tin vessels similar in shape to those figured in the accompanying wood cut; the one should be about 20 inches long and 6 inches in diameter, and the other 18 inches long and 5 inches in diameter. The latter may be graduated into spaces of eight cubic inches

by means of our ordinary gallon measure, which is the old wine measure of Great Britain and the one that is adopted by the United States Pharmacopœia; it consists as every body knows of 8 pints of 16 ounces each, the ounces measuring 1·8 cubic inches.



Having placed the smaller vessel perfectly upright, measure into it a gallon of water less half an ounce, and with a rule ascertain the precise distance from the surface of the liquid to the brim of the vessel, then placing this measure outside of the tin, mark the height of the water as 230 c. in. In a similar manner with half a gallon and 10¼ fluid ounces, mark 134 c. in.

Next divide the space between these two points into 12 equal parts which will be measures of 8 c. inches each, and with the compasses continue the graduation upwards and downwards, placing the figures on the inverted vessel as here shown. If its diameter be everywhere alike the measure must be correct, its

accuracy however may be readily tested by the annexed subdivisions of the same measure. The pulleys and counterpoise may now be adjusted to the graduated tin.

Next fill the larger vessel with water so that the smaller may be just covered when inserted as low as possible into it, and mark the height of the water on the inside of the larger tin. Then raise the small one gently until the 174 c. in. line appears even with the surface of the water, and make a second mark of its level. Finally put the third graduation in the large tin when the smaller is raised completely out of it.

Lastly, affix two or three feet of flexible tubing and a mouth piece to the top of the small tin, and the spirometer will be ready for use.

The graduation inside of the larger vessel is to detect and obviate any difference in the level of the water within and outside of the rising vessel, which after receiving the breath should be depressed until the water is at its proper level, the tube being closed by the fingers during the adjustment and reading off.

With this scale as a guide the York Glass Company of England has made me a beautiful spirometer of this form entirely of glass, and correctly graduated into cubic inches. It differs somewhat from this one in having a perforated glass stopper in the centre to which the silk covered tubing is attached; and also in having two cords, one on each side of the stopper, and four pulleys which prevent it from turning. Thus arranged mounted on handsome brackets, apart from its usefulness in ascertaining the presence and progress of phthisis, it forms an elegant addition to a surgery.—*Canada Lancet*, *June* 15, 1863, *p.* 27.

116.—ON THE TREATMENT OF APHONIA BY THE DIRECT APPLICATION OF GALVANISM TO THE VOCAL CORDS.

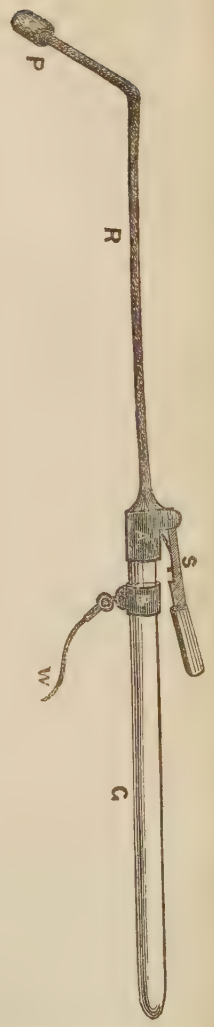
By Dr. Morell Mackenzie, Physician to the Dispensary for Diseases of the Throat.

The operation requires but little skill on the part of the operator, and still less fortitude on the side of the patient. Whether magnetic or chemical electricity be employed is not a matter of any importance; for, while I have invariably employed the former, Dr. Smyly, in his two very successful cases, used the latter.

To employ magnetic electricity properly, an assistant is required to turn the electric machine with one hand, and with the other to hold one sponge against the side of the neck, either

over the situation of the pneumogastric nerves, or directly on the thyroid cartilage. The operator should hold the laryngeal mirror with the left hand, and with the right introduce the laryngeal galvaniser below the epiglottis. He now touches the spring on the upper part of the instrument with his index finger, and the current passes directly to the cords.

The woodcut shows the instrument* very well; and it can be seen that the current does not pass beyond the metal ring (B) till the operator touches the ivory handle (I), when the spring (S) connects the two rings (A and B); and the current then passes on to its destination. The irritation of a foreign body in the larynx causes the vocal cords to become tightly approximated, and thus it renders it easy to touch their upper surfaces. By placing the point of the laryngeal galvaniser on the arytenoid cartilages, both branches of the pneumogastric may receive the electric impression.



In conclusion, I may observe that I have employed galvanism to the larynx in more than thirty cases, and that no bad effect has ever followed its use. Most patients feel the electric action more acutely externally than in the larynx, though some have told me that they felt an agreeable sensation of warmth passing down from the larynx to the scrobiculus cordis. Others, again, have described a choking and pricking sensation in the throat.

The success attending the application of galvanism to the cords in aphonia will depend entirely on the proper selection of cases suitable for treatment. The absence of any structural disease or inflammatory changes,

* The "laryngeal galvanizer" is made by Mr. Krohne, 241, Whitechapel road.

on the one hand, and a state of impaired innervation on the other, are, of course, the features which promise the most satisfactory results from this method of treatment.

The following two cases came under my care only the other day; and as they both illustrate very remarkably the value of the direct application of galvanism to the vocal cords, they are now added to the other reported cases. They both belong to that class in which "aphonia occurs as a symptom in conjunction with considerable disturbance of the nervous system."

Aphonia of Eight Months' duration cured by One Application of Galvanism to the Vocal Cords.—Jane R., aged twenty-three, a tall stout young woman, from Frencham, was brought to the Dispensary for Diseases of the Throat on August 24th, 1863. She was suffering from complete aphonia, loss of appetite, and considerable constitutional debility. She was not at all hysterical, according to her own account, nor did she appear to be so. She whispered to me that twelve months previously she had a very severe sore throat, which had been lanced and burnt with caustic by Mr. Knowles, of Farnham, under whose care she remained for five months. In December, 1862, being then extremely depressed and weak, and having scarcely recovered from her bad throat, she lost her voice; and since then she had never been able to speak a word out loud. Mr. Knowles recommended change of air, and so also did Dr. Cobb (formerly of the London Hospital). After a fortnight's residence in London, the patient applied at the Dispensary in the condition described.

On making a laryngoscopic examination, the approximative action of the vocal cords was seen to be very feeble; otherwise, the larynx was perfectly healthy.

August 25th. I galvanised the vocal cords, and the voice immediately returned. It was weak at first, but soon became full and strong. I only repeated the galvanism once (on the 27th); but the voice was really restored by the first application.

Aphonia of Five Months' standing cured by One Application of Galvanism to the Vocal Cords.—Miss Gertrude S., a pretty child, aged ten, suffering from loss of voice, but otherwise healthy, was brought to me, on August 27th, by Mr. Taylor of Guildford. Mr. Taylor gave the following account of the little patient's aphonia. He was called to see her in March, when he found her sitting up in bed, and breathing excessively quickly. The physical signs did not at all explain the rapid respiration; and he was struck with its remarkably nervous character. An attack of bronchitis, in which the nervous symptoms predominated, afterwards developed itself; and on recovery it was noticed that the child had lost her voice. Various tonics were

tried in vain; and change of air to Brighton (where a laryngoscopic examination was made by Dr. Ormerod) failed to restore the voice.

Finding that the larynx was quite healthy, with the exception of a relaxed state of the vocal cords, in the presence of Mr. Taylor and the child's parents I applied galvanism to the vocal cords. The voice was then and there perfectly restored; and when the little girl left me, she was able to speak in her natural voice.

[Dr. Mackenzie relates numerous other cases in which the practice was very successful.]—*British Medical Journal*, *Sep.* 19, 1863, *p.* 317.

17.—TANNIN IN DISEASES OF THE RESPIRATORY ORGANS.

M. Woillez has described the results which he has obtain e from the use of tannin in affections attended with excessive bronchial secretion. He has given the medicine in pills, each containing from 15 to 20 *centigrammes* (about $2\frac{1}{4}$ to 3 grains); of which two were taken twice daily at meal-time. The treatment has always been borne well. When continued for a long time, it seemed in two or three cases to produce some nausea before meals; but this ceased on merely suspending the medicine during three or four days. In no case was obstinate constipation produced. M. Woillez first used tannin in bronchitis, and subsequently in certain pulmonary congestions, in the bronchial dilatation attending the termination of some cases of pneumonia, and in phthisis.

In bronchitis, with subcrepitant râles occupying at least the bases of both lungs posteriorly, M. Woillez has given rhatany (which contains tannin), and also tannin itself, with the effect of diminishing the secretion. He relates the case of a patient, aged seventy, who had pulmonary emphysema with bronchitis, and of one aged sixty-seven, who had an attack of sub-acute bronchitis, in both of whom four-*gramme* doses of rhatany were given each day with distinct benefit.

On the other hand, tannin has little or no efficacy in chronic bronchitis, when the excessive secretion has become a kind of organic habit.

The preliminary congestion which attends severe fevers, especially of the typhoid class, has been rapidly removed under the use of tannin given in the doses indicated above. In one case especially, where the engorgement of the bronchi was so great as to produce extreme dyspnœa and cyanosis, these symptoms were rapidly removed by the tannin.

In the intrabronchial hypersecretion which accompanies uncomplicated bronchial dilatation, tannin produced no effect

beyond slightly diminishing the abundance of the expectoration. M. Woillez also tried gallic acid in these cases, but with scarcely more marked effect.—*British Med. Journal, April* 4, 1863, *p.* 349.

18.—ON THE PATHOLOGY OF TUBERCLE.

By Dr. J. Hughes Bennett, F.R.S.E., Professor of Clinical Medicine in the University of Edinburgh.

In endeavouring to determine the nature of tubercle, we must remember that it occurs in young persons in whom the nutritive functions are deficient in energy, whether from poverty and incapacity of obtaining food, from deficient stamina, or from causes of whatever kind which induce exhaustion. Hence its frequency among the ill-fed poor, in orphan and foundling institutions, among badly-nursed children or weak and dyspeptic young persons, and after acute inflammations, whooping-cough, eruptive fevers, and other disorders that weaken the body. When, under such circumstances, exudation occurs in one or more textures, it does not undergo those changes we observe following inflammation in healthy persons. The vital changes are slow, and easily arrested. Instead of cells and perfect textures being produced, the efforts at vital transformations are abortive. The whole remains molecular and granular, or at most ill-formed nuclei are produced, which have received the name of tubercle corpuscles.

It is rare, however, that this weakness of the constitution acts uniformly at all times and in all textures. Hence it may frequently be observed that tubercle is more or less associated with pus and granule cells, or fibrous and other growths; with the exception of cancer, with which it is rarely combined.

I regard tubercle, therefore, as an exudation, which may be poured out into all vascular textures in the same manner and by the same mechanism as occurs in inflammation, only from deficiency of vital power it is incapable of undergoing the same transformations, and exhibits low and abortive attempts at organization, and more frequently, as a result, disintegration and ulceration. For the same reason we observe that whenever an undoubted inflammation becomes chronic with weakness, the symptoms and general phenomena become identical with those of tuberculosis. Hence there is little difference between a chronic pneumonia of the apex of a lung and a phthisis; the one, indeed, passing into the other.

When we endeavour to discover THE ORIGIN of the weakness producing this effect on the exudation, we must ascribe it to imperfect nutrition; indeed, it is impossible for any observant

practitioner to avoid noticing throughout the whole course of the disease the derangement that occurs in the digestive system. All writers refer to the deficiency and irregularity of the appetite, and the functions of the whole alimentary canal will be found from first to last in an abnormal condition: the tongue is either furred and furrowed, or glazed and unusually red; the teeth are carious; the stomach capricious—somtimes rejecting food, at others retaining it an unusual time, with accumulation of flatus. There is a general indisposition to eat fat or fatty substances; and the appetite is feeble, absent, or, in rare cases, voracious. In the former case there is thirst and eructation of acid matters into the mouth; flatulence and tympanitis of the bowels are frequently complained of; the alvine discharges and egesta are as irregular as the food and ingesta. Sometimes there is constipation, at others diarrhœa. The stools are only slightly tinged with bile, and in children often consist of white glairy matter, like white of egg. It may also be invariably observed, that when by proper regulation of the diet, of exercise, or other circumstances which regulate the nutritive functions, the alimentary canal performs its duty, the health improves, and the tubercular formations diminish.

These, indeed, according to their excess or progress in particular organs, communicate to the disease more or less of a local character. In systematic works they have been described at length as separate diseases, although, in truth, they are only manifestations of one disease.

After a time the continuance or violence of the local disease reacts upon the constitution, and a state called hectic fever is established, the which, inducing exhausting diaphoresis and emaciation, ultimately destroys the patient.

Natural progress of tuberculosis.—In tracing, therefore, the natural progress of tuberculosis, we observe it to commence in debility caused by impairment of nutrition. This leads to local congestion and exudations. The latter remain abortive, and consist of molecules, granules, and imperfect nuclei, which soften and cause ulceration, with more or less disorganization. The great contribution of M. Louis to the pathology of this subject was the establishment of a law, that whenever tubercle occurred in the body it also existed in the lungs, and whenever it occurred in the lungs it appeared first at the apex. This law, though now known to be subject to several exceptions, is still so generally correct as to be of the utmost service in diagnosis. Now, in the lungs, it was long supposed, and the opinion is still very general, that tubercle almost always proceeded onwards to a fatal termination; yet so far is this from being the fact that it can easily be shown that tubercle is arrested spontaneously in one-third of all the persons in whom

it occurs. Nothing is more common in examining dead bodies than to meet with cretaceous and calcareous concretions at the apices of the lungs more or less associated with cicatrices. Of seventy-three bodies which I examined consecutively some years ago in the Royal Infirmary, I found these lesions in twenty-eight. Of these, puckerings existed with induration alone in twelve, with cretaceous or calcareous concretions in sixteen. Since then I have examined many hundred lungs at the inspections in the Infirmary, and am satisfied that these proportions exist pretty constantly. At the Salpêtrière Hospital in Paris, Roger found them in fifty-one bodies out of a hundred; at the Bicêtre Hospital in the same city, Boudet found them in 116 out of 135 bodies. Both these institutions are establishments for persons above seventy years of age.

These lesions are so frequent, therefore, that it is important to determine whether they are really proofs of arrested tubercle. This seems to be established by the following facts :—

1. A form of indurated tubercle is frequently met with, gritty to the feel, which, on being dried, closely resembles cretaceous concretions. 2. These concretions are found exactly in the same situation as tubercular deposits are. Thus they are most common in the lungs, and at their apices. 3. When the lung is the seat of tubercular infiltration throughout, whilst recent tubercle occupies the inferior portion, and older tubercle and perhaps caverns the superior, the cretaceous and calcareous concretions will be found at the apex. 4. A comparison of the opposite lungs will frequently show, that whilst on one side there is firm encysted tubercle, partly transformed into cretaceous matter, on the other the transformation is perfect, and has occasionally even passed into a substance of stony hardness. 5. The puckerings found without these concretions exactly resemble those in which they exist. Moreover, whilst puckering with grey induration may be found at the apex of one lung, a puckering surrounding a concretion may be found in the apex of the other. 6. The seat of cicatrices admit of the same exceptions as the seat of tubercles, and in about the same proportion. There can be no question, therefore, that these cicatrices and concretions for the most part indicate the arrestment, disintegration, and transformation of pre-existing tubercular exudations into the lungs.

The arrestment of tubercle in the lung is not confined, however, to its early stage. It may be stopped at any period, and numerous cases are now known where even vast tubercular caverns have healed and cicatrized. I here show you a series of preparations, which must convince the most sceptical of the truth of the statement.

Treatment.—It follows, therefore, that if we can succeed in

supporting the nutritive functions, there is no reason why tubercle once formed should not be gradually absorbed, and a tendency to subsequent deposits completely checked. Formerly this was rarely accomplished, in consequence of the idea that phthisis pulmonalis ought to be treated by paying attention especially to the lungs and respiration. Hence cough mixtures, sedatives, a warm atmosphere, tar vapour, and other substances to influence the local lesion. Other symptoms had their special treatment, such as sulphuric acid to relieve sweating, acetate of lead and opium to check hæmoptysis, tonics to give strength, astringents to check diarrhœa, and so on; while so far from any vigorous effort being made to improve nutrition, the diet was kept low, consisting of farinaceous substances, or at most milk; and to avoid irritation, the patients were confined to bed or their rooms, which were kept at an equable temperature.

Our present knowledge has led to a complete revolution in our practice. Thus, moderate exercise to stimulated respiration, cold sponging, nutritious diet, and a bracing system have been found more beneficial; at the same time avoiding anodynes and cough mixtures, which, by diminishing the appetite, and inducing weakness, interfere with nutrition. Indeed it has been proved that the best method of lessening cough, expectoration, and sweating, are the means which produce increase of general strength; so that if we can carry out the general indication, the local symptoms may be safely left to themselves.

In doing this, we have now the advantage of possessing a remedy which in cases of tuberculosis is of the highest nutritive importance, as it gives to the system that fatty element in which it is so defective, and in a form that is more easily assimilated, and more capable of adding to the molecular element of the body than any other. I allude to COD-LIVER OIL.

And now you cannot fail to perceive how this molecular doctrine of organization and of growth not only explains the known facts in physiology and pathology, but constitutes the basis for a true therapeutics. Fatty particles form the molecular fluid of chyle; while out of chyle, blood, and through it all the tissues are formed. Impairment of digestion in scrofula and tuberculosis renders chylification imperfect; the fatty constituents of the food are not separated from it and assimilated; the blood consequently abounds in the albuminous elements, and when exuded forms, as we have seen, tubercle. To induce health, it is necessary to restore the nutritive elements which are diminished, and this is done directly by adding a pure animal oil to the food. While an inflammatory exudation in previously healthy persons should be treated by supporting

the vital powers generally, so as to permit its molecules going through the transformations necessary for their growth and elimination; in tuberculosis we add the constituent of food necessary for the formation of the molecules themselves. By so doing, we form good chyle and blood; we restore the balance of nutrition which has been disturbed; respiration is again active in the excretion of carbonic acid gas; the tissues once more attract from the blood the elements so necessary for their sustenance. The entire economy is renovated; so that while the histogenetic processes are revived, the histolytic changes in the tubercle itself also are stimulated, and the whole disappears. When, in 1841, I first announced the virtues of cod-liver oil as an analeptic or nutrient in this class of cases, so little was the substance known that linseed oil was furnished to the Royal Infirmary of this city instead of it, when I induced Dr. Spittal to try it in his wards. At present, I need scarcely say, whole fleets are engaged in transporting the oil from the extensive fisheries where it is manufactured for medicinal purposes; and its beneficial results are universally recognised.—*Lancet, July* 4, 1863, *p.* 4.

19.—ON ASTHMA.

By Dr. J. Burdon Sanderson. (Being an abstract of a paper read before the Harveian Society of London).

After stating that the definition of asthma as a species of disease must be founded exclusively on the study of its development during life, with but little assistance from morbid anatomy, the author proceeded to describe the phenomena of an attack, dwelling particularly on the nocturnal onset of the affection, and the complete remission of all the symptoms during the intervals. The characteristic elements of asthmatic dyspnœa were stated to be, (1) excessive expansion of the chest; (2) resisted but forcible efforts to expire; (3) diminution of the exchange of air in the chest, and consequent venous condition of the blood. In the asthmatic state the chest is arched forwards in extreme inspiration, the diaphragm sinks below its normal level, so that its power is lost, while the almost fruitless efforts te renew the air in the chest are accomplished by elevation of the upper ribs. The expiratory muscles of the abdominal wall are in excessive action, but, in spite of their efforts, air is expelled from the chest with extreme difficulty and in small quantity. The condition of the blood which is thus produced gives rise to the sensation of want of breath, and impels the patient to make conscious and voluntary efforts to get rid of the used air, which is as it were locked up in his chest, so as to enable himself to obtain a fresh supply. In order to arrive at

an explanation of this remarkable state, so different from every other form of dyspnœa, the circumstances must be considered under which it is developed. Asthma comes on during those hours of the night in which sleep is ordinarily most profound. At night the respiratory function is modified; the quantity of air exchanged is diminished. This diminution is partly, though not entirely, dependant on a change in the respiratory function of the vocal cords, which in nocturnal breathing approach each other more closely than in the waking state, that muscular action by which they are kept apart is relaxed. The more profound the slumber the greater the relaxation, and the narrower the chink of the glottis (*e.g.*, in snoring expiration). Assume for a moment that this natural relaxation becomes excessive. As the laryngeal resistance is normally greater to the egress than to the ingress of air, the chest falls more and more with each respiration, the inspiratory power of the diaphragm lessens, the exchange of air is diminished, the blood becomes less arterial, and thus, without any agency beyond the the intensification of that condition of respiration which exists in natural sleep, all the elements of asthma are developed. In short, it is possible to account for asthma as a result of disorder in the respiratory function of the glottis. But if it be remembered that the muscular fibres on which this function depends are governed by the same nerve as the contractile fibres of the lung tissue (as is shown by the experiments of Donders and others), it will be readily admitted that if in asthma the respiratory fibres of the glottis are relaxed, those of the lung are in a similar state of relaxation, which would afford an additional explanation of the remarkable dilatation of the chest. This view accords perfectly with what is known as to the intimate relation of asthma and emphysema. Emphysema cannot be regarded as the cause of asthma; it would even be more correct to speak of it as its consequence. Emphysema results from resisted but powerful efforts on the part of the respiratory muscles to expel air from an expanded lung. This is precisely the state of things in asthma. But the relation between the disease and the lesion is rather that of community of cause than of consequence. Temporary over-expansion of the lung is a constituent of asthma; permanent expansion cannot exist without emphysema. Under the head of "Diagnosis," the author distinguished between asthma and spasmodic dyspnœa, in all forms of which the relation between the inspiratory and expiratory act is the reverse of that which holds in asthma,—*e.g.*, in the spasmodic dyspnœa of phthisis, acute bronchitis, and dwelt on the importance of determining the relative duration of the inspiratory and expiratory act, which may be best effected not by listening to the chest, or observing its movements, but by

auscultation of the larynx. As regards treatment, the author had found that no remedies were useful during the attack of asthma excepting stimulants, of which ipecacuanha in large doses, alcohol, and coffee were instanced as most important.—*Med. Times and Gazette, May* 16, 1863, *p.* 521.

20.—SOME ACCOUNT OF THE DATURA TATULA, AND ITS USE IN ASTHMA.

By Dr. John F. M'Veagh.

[Dr. M'Veagh's attention was first called to the datura tatula by a gentleman whom he was attending for asthma. The smoking of the drug had in this case a "most magical effect." The plant had been procured from Malta, where it grows abundantly in the governor's garden. The bruised seed and dried herb were mixed equally. The Right Hon. More O'Farrall, M.P., who has been governor of Malta says: "that datura tatula was a remedy much prized there in cases of asthma, successful in some cases and in others not." Probably the latter are not pure cases of asthma. Dr. M'Veagh obtained some of the plant from Messrs. Bewley and Evans, of Dublin, and has tried it in several cases.]

The first case was a clergyman in this city, liable for years to most severe attacks of asthma, in which the usual remedies were of little avail, until after many days of suffering. I induced him to give the datura tatula a trial; and the last time I saw him he informed me, with great pleasure, that smoking the plant, in the manner I directed him, had completely cured him of a threatened paroxysm. He had often smoked stramonium, but with no relief to his suffering. He takes also the extract of the tatula as a prophylactic, at bed-time. The next case was that of a gentleman in the county Roscommon, who has been a martyr for years to attacks of pure asthma, and who tried in vain to procure some remedy to ward off the paroxysms. He now smokes the tatula whenever the fit is impending, with perfect relief. Another case of chronic bronchitis has been thoroughly benefited by the extract in a pill, at night, and some of the tincture added to an ordinary expectorant mixture.

These cases, even few as they are, give me every reason to hope that in the datura tatula we have found a valuable remedy in cases of asthma, and it will be a useful adjunct to our Materia Medica.

No doubt, cases of uncomplicated asthma are rare; but even in complicated cases, as in that I have first mentioned, it proved a most valuable agent in affording relief. Its action upon the human system resembles stramonium, in some degree; but it is more antispasmodic, and less narcotic, than the former, and

rarely causes headache, or leaves any unpleasant dryness of the fauces, or sense of constriction in the pharynx, as the stramonium so constantly does. Messrs. Bewley and Evans have prepared, according to my directions, the ingredients for smoking, also an extract and a tincture. The extract is made with coarsely-pounded tatula, with cold water, exhausted by percolation, and the liquor evaporated to the usual consistence by steam heat. The dose is from half-a-grain to one and a-half grain. The tincture is made by digesting, for seven days, one part of powdered herb in eight parts of proof spirit. Dose—20 to 60 minims. The tincture, diluted with distilled water, remains transparent. The solution precipitates greyish yellow with tincture of galls and ferrocyanide of potassium, becomes of an inky colour with solution of perchloride of iron, and precipitates whitish with nitrate of silver. It does not precipitate with perchloride of mercury or acetate of lead. In a preliminary analysis of the plant, made by my friend, Dr. Aldridge, he finds that it contains an alkaloid, tannin, and, probably, some chloride. The botanical history of the plant will be found in Pariera's Materia Medica; but he makes no comment upon its utility.—*Dublin Quarterly Journal*, *Aug.* 1863, *p.* 127.

21.—ON THE ACTION OF EXPECTORANT REMEDIES.

By Dr. W. T. Gairdner, Professor of the Practice of Physic in Glasgow University.

[There is in works on therapeutics no attempt at a uniform or consistent theory of the action of expectorants, the subject being usually left very much an open question. The most common views are that expectorants act upon the secretions of the bronchial mucous membrane, by increasing them when scanty or viscid, by checking them when excessive, or by modifying them when morbid.]

In all mucous membranes forming an elongated and complicated tract, and still more in all those glands which end in cæcal terminations, we have reason to believe that the superfluous mucus is removed outwards, along with the other secretions or excretions, by a regular peristalsis of the contractile walls of the mucous cavity. It is so in the intestines, liver, kidneys, and uterine organs. We know the mechanism by which the fœtus is expelled from the long tortuous uterus of the lower animals, and we know that it is a similar mechanism which accomplishes the regular transit of the fæcal matter, with the superfluous mucus, along the intestine, and which in disease dislodges a calculus from the liver or kidney. We know that a

like apparatus exists in the bronchial tubes, but physiologists have probably not yet agreed in according to it a like function. The contractility of the bronchial circular fibres is no longer a matter of doubt, since the able experiments of Dr. Williams. But the use in the economy of this contractile endowment has been a fruitful topic of dispute; and all modern treatises on physiology give a list of contradictory speculations upon the subject. The idea of a peristaltic action capable of silently removing the superfluities of the pulmonary mucus, as well as inhaled smoke, dust, and all incidental obstructions was, I believe (under the name of a "deobstruent function of the bronchial tubes"), brought under the notice of the profession for the first time by me in 1851.

Since that period I have, in teaching, constantly described the bronchial muscles as the "scavenger muscles" of the respiratory tract; as performing for the lungs and bronchi the same service as the intestinal peristalsis in the case of the digestive tract, or that of the ureters and biliary ducts, as regards obstructions in their respective canals. And following out the same analogy, I have regarded and described expectorant remedies as being for the most part excitors of the bronchial peristalsis, in the same sense as carthartics are excitors of the intestinal peristalsis, or as ergot of rye is an excitor of the uterine action.

In aid of these analogies, I have repeatedly adverted to the following physiological and pathological circumstances, many of which are only explicable, to my mind, by the theory of a bronchial peristalsis:—

Suspended or irregular intestinal peristalsis (constipation) is very apt to be followed by colic spasms, with accumulation of air and fæces in the intestines; the relief of these symptoms, however brought about, being accompanied by the discharge of the retained and accumulated air and fæces, the result of the previous constipation, and of the colic spasm. In like manner, suspended or irregular bronchial peristalsis determines the paroxysm of asthma, with retention and accumulation of the normal pulmonary mucus; and as in the case of colic the relief of the painful spasm is often accompanied by movement of the bowels, so in asthma the resolution of the paroxysm is generally accompanied by the discharge of this accumulated mucus, the normal character of which, and the absence of all inflammatory complication, is shown in many cases by its pearly semi-transparency, and natural consistence.

Spasmodic colic is sure to be relieved as soon as the obstruction of the bowels gives way, whether under opiates or laxatives; the consequence, in both cases, being the voiding of the retained excreta. In like manner, spasmodic asthma is sure to be relieved as soon as the peristalsis is freely established; and the index to

this is the discharge of the retained normal mucus, which comes away at the end of the paroxysm.

The remedial agents that have been ascertained by experience to tend to the removal of mucus from the lungs, are chiefly of two classes:—1. Aromatic and volatile substances, such as camphor, ammonia, assafœtida, garlic, myrrh, copaiba, and several other balsamic extracts, turpentine, benzoin, &c. The action of these is probably local, and consequent on their direct contact with the pulmonary mucous membrane, either through the secretions, or through the expired air. 2. Substances which are expectorant in small doses, nauseant and emetic in larger doses, such as antimony, ipecacuanha, squill, senega, lobelia, tobacco, &c. It is these last that I believe to be peculiarly and specifically the excitors of bronchial peristalsis.

This peculiar and specific action of low doses of nauseant remedies, as exhibited on the bronchial muscles, is quite capable of being detached from the more violent emetic action of the larger doses, as is every day witnessed in the administration of squill, ipecacuanha, and even antimony. Nevertheless, it is a fact well-known to practitioners, that emetic doses of these substances have a quite marvellous power of relieving bronchial obstruction, as in hooping-cough, croup, &c., with a rapidity and completeness rarely witnessed when the low doses are alone prescribed. This singular power of emetics over the lungs is ascribed by almost all who attempt to explain it, to the mere mechanical operation of the act of vomiting on the external surface of the lungs. I submit that this is manifestly a very crude and imperfect explanation of so striking a fact.

But not only does vomiting, when produced by the administration of remedies, relieve the lungs by producing copious expectoration; it is equally true, that severe and irritative cough, such as that of hooping-cough, or of some stages of pulmonary phthisis, is apt to be followed by vomiting. This fact is familiar to practitioners, and can only be explained by some marked nervous communication between the stomach and the lungs.

The channel of this nervous communication is by no means obscure. The pneumo gastric nerve, which has its terminus in the stomach, being distributed both to the mucous membrane, and to the muscular coat of that organ, has a like relation to the pulmonary mucous membrane, and the circular muscles of the bronchi. In both cases, it is at once the afferent and the efferent nerve. And thus the excito-motor phenomena of the lungs and stomach are brought into a very intimate anatomical and physiological relation. The physiological and pathological phenomena of the one organ are readily reflected upon the other; the medicines that act on the one organ are readily brought, by a variation in the dose, to act upon the other. The

same medicines, the same physiological disturbances, are apt to affect also the movements of the heart, through the connection of the pneumogastric nerve with the cardiac plexus.

The object of the present paper being merely to call attention, as briefly as possible, to a subject which I believe to be of considerable importance, though hitherto to a great extent overlooked by therapeutical writers, I do not propose to accumulate details as regards the action of individual remedies of the expectorant class. But I may venture to point out as a testing inquiry in relation to this subject, the acknowledged power of antimony in acute pneumonia and bronchitis, and of squill or ipecacuanha in almost every morbid state of the mucous membrane of the air passages. It is in accordance with my experience, and I have no doubt with that of others, that these remedies often act most favourably when their action is attended by little or no abrupt physiological change, either in the circulation or in the excretions. In particular, the evacuant action of these and other like remedies, supposed by Cullen to be of the very essence of their power as expectorants, is often rather to be avoided than sought in cases in which the relief of the lungs is the object to be attained; and experience, I think, teaches us that this object can often be accomplished by carefully regulated doses of squill, or even of the most powerfully nauseating expectorants, such as ipecacuanha or tartar emetic, without any appreciable general increase of the excretions, such as is presumed to take place by those who hold with Cullen that increase in quantity of the bronchial secretion is the primary cause of the therapeutic action of expectorants. The well-known phenomena of *tolerance, i.e.*, the suspension of the ordinary poisonous effects of a remedy during its therapeutic operation, is not confined to the case of the antimonial medicines, but may be observed to a considerable extent during the action of most of the nauseating or depressing expectorants. It is, however, during the favourable action of tartar-emetic in pneumonia that this phenomenon is most strikingly manifested, the therapeutic value of the remedy being developed entirely apart from any of its more commonly ascertained physiological effects. I have long been of opinion, indeed, that vomiting, purging, diaphoresis, and depression of the heart's action—in general terms, all the ordinary physiological effects of the drug—are in reality rather opposed than otherwise to the true therapeutic action of antimony in pneumonia. Without venturing, however, to enlarge at present on this wide and difficult subject, which I have treated incidentally from the clinical point of view elsewhere,* I am not without hope that the hypothesis sub-

* Clinical Medicine, pp. 53, 643.

mitted in this paper will be found to afford an explanation of some part of that mysterious so-called *antiphlogistic* power of heroic doses of antimony in pulmonary affections, which was first pointed out by Rasori, and of which it may be said that it has stood the test of experience far better than the theory in connection with which it was first published.

Note to the preceding paper.—I reproduce here the passage on the "Deobstruant function of the bronchial tubes," from the papers on bronchitis above referred to; the exposition of the theory therein contained being from a somewhat different point of view from that of the present paper. The connexion of collapse of the lung with obstructed bronchi, and the mechanism of the cure of the obstruction in such cases, leads to the following observations:—

"*Deobstruent Function of the Bronchial Tubes.*—Supposing these views correct, the mechanism by which the viscid mucus is expelled to such an extent as to permit the return of air into the occluded vesicles, demands further consideration. We have seen that the expiratory forces are, under such circumstances, thrown out of action; while those of inspiration, even if strong enough to displace the obstructing plug, can never permanently remove it. Under these circumstances it seems to be reasonable to ascribe to the bronchi themselves an active part in the expulsion of obstructive mucus, by means of the slow contraction of those circular fibres, the muscular character of which was demonstrated by Reisseisen, and whose physiological properties have been fully illustrated by the experiments of Dr. Williams and others. It is now well established that these fibres have no such vital endowments as would enable them to co-operate with the movements of respiration, influenced as these are by the will. "The contractility," says Dr. Williams (of the bronchi), "resembles that of the intestines or of the arteries more than that of voluntary muscles or of the œsophagus, the contractions and relaxations being gradual and not sudden. They are, however, much less tardy than those of the arteries." This kind of contractility is precisely that which empties the arteries of their blood after death, and which, in all probability, contributes to the passage of calculi along the ureters or gall-ducts. It is also more or less analogous to the peristaltic contraction of the intestines, or of the elongated tubular uterus of many of the lower animals, by which the solid or fluid contents of these viscera are gradually expelled towards their outlet. The experiments referred to appear to prove that the contractility of the air tubes is readily excited, not only by galvanism applied externally, but by mechanical and chemical stimuli in contact with their mucous membrane.

It is easy, therefore, to understand, that the bronchi (or at least those which have not cartilaginous walls) may have a most important power of dislodging obstructions altogether independent of the forces of respiration. When these forces are in active operation indeed, the tonic or slow contraction will be in abeyance, or very slightly manifested, as the air-tubes will then be dilated to their full extent at each inspiration and expiration. But, according as the admission of air to any part of the lung becomes less from obstruction, the detrusive action of the bronchial muscles will increase, being thus called into effective action precisely at the period when most required. Perhaps, also, the slighter contractions of these muscles may be in almost constant operation in the normal condition, to aid, by a kind of peristaltic movement, the outward passage of the physiological secretion. This secretion, comparatively small in quantity as it is, would almost necessarily tend to accumulate in the air-tubes (seeing that no efforts of coughing or forced expiration are made for its removal): and this would take place, particularly in the smaller bronchi, which we know to be especially subject to mechanical obstruction, and in which the ciliated epithelium, so abundant in the cartilaginous bronchi and trachea, gradually gives way to transition forms, not constantly furnished with cilia.

"It may not be easy to adduce direct proof of the theory here proposed, as to the function of the bronchial muscles in health and disease; but as *no* theory upon this subject has yet been found consistent with our present physiological knowledge, and as the above speculation appears in all essential points to correspond with what is already known of the action of these muscles, it may be worth while to give it consideration, were it merely to rescue us from the unphilosophical predicament of supposing the circular fibres of the bronchi to be endowed with contractility solely for the purpose of producing the asthmatic paroxysm. That these fibres are probably perfectly passive, as regards the respiratory act, is now generally admitted (contrary to the ancient opinion) by physiologists; and under these circumstances the theory of their deobstruent action, even in health, but more especially in the diseased states of the pulmonary texture above described, appears to supply a gap in the chain both of physiological and pathological phenomena.

"The ordinary form of the paroxysm of spasmodic asthma, of the humoral kind, is full of instruction, when considered by the light of the preceding views. Notwithstanding the extremely doubtful and difficult pathology of the disease, it seems impossible to avoid referring its most obvious symptoms to some kind of irregular action of the muscular apparatus of the air-tubes. The copious expectoration, again, with which the attack

concludes, and by which it is immediately relieved, appears to indicate that undue accumulation of mucus has been taking place; while the absence in some instances, of all considerable catarrhal symptoms appears to demonstrate that this accumulation is directly connected with the spasmodic derangement which produces the paroxysm. The connection of these two phenomena it is by no means difficult to understand, according to the principles already laid down; in fact, if the removal outwards of the pulmonary mucus depends, in the normal state, upon the regular peristaltic contraction of the bronchial muscular fibres, it is obvious that accumulation must accompany the derangement of that action, just as constipation is the invariable concomitant of the analogous derangement of colic or ileus. In both cases the paroxysm ceases when the normal action is restored; and in general there is in both a copious discharge of the previously retained excretions.

"Asthmatic persons are often subject to a slight habitual wheezing in some part of the chest, and also to an occasional cough, with or without slight expectoration, but with no other symptom of catarrh. These symptoms have been described to me as occurring on exertion in the open air after prolonged rest; they are accompanied with slight dyspnœa, and this, together with the rest of the symptoms, ceases when the exertion is continued long enough to produce some degree of reaction. These phenomena are unquestionably the minor degree of the paroxysm; they are probably caused by the same irregular action of the bronchial muscles as causes the latter, but do not reach the climax, because the nervous centres are awake to the first approaches of disorder, and the excitement and quickened respiration consequent on exertion produce the cure. The aggravated asthmatic paroxysm always occurs during sleep, when the energy of the nervous system is at the lowest, and the comparatively quiescent condition of the respiratory function favours the accumulation of mucus. It seems probable that the asthmatic paroxysm is attended with more or less of pulmonary collapse, the consequence of the accumulation in the bronchi; but I have not had an opportunity of direct observation on this point. It is certain, however, that this accumulation must seriously contribute to the production of the most distressing symptoms of the paroxysm. The spontaneous cure in the real paroxysm, as in the minor attack, or threatening of asthma, above referred to, usually takes place when the nervous centres have been thoroughly roused, and the whole system brought into a state of reaction by the exertion consequent on the dyspnœa.

"An interesting fact, in connection with asthma and other spasmodic respiratory diseases, is the frequent occurrence of

vomiting during the paroxysms—a fact which points to the probable dependence of all these affections on some morbid condition in the communication of which the pneumogastric nerve and the medulla oblongata are the principal parts concerned. A phenomenon exactly the converse of that just alluded to, is the profuse and immediate expectoration in cases of obstructive bronchitis after the administration of an emetic. Now it is interesting to observe, in relation to both these facts, and their bearing on the subject we have been considering, that Volkmann has apparently succeeded in demonstrating the influence of stimuli applied to the trunk of the vagus nerve upon the muscular contraction of the bronchi—a point left open to doubt, both by the experiments of Williams and by the subsequent ones of Longet. The expeditious and complete relief afforded by an emetic in cases in which there has been extreme difficulty of expectoration, is one of the most striking phenomena connected with bronchitis; and one of which, I believe, no sufficient explanation has yet been afforded. It appears, however, to be completely in harmony with the theory I have advanced in the preceding pages.

"Another fact tending still further to illustrate this view, is found in the experiments of Reid, Longet, Schiff, and others, on the effects of section of the pneumogastric trunk, or of its visceral branches, on the lungs and bronchi. All experiments concur in proving that these operations are followed by a very large accumulation of frothy mucus in the bronchi. Changes in the lungs have also been observed, which seem to be of the nature of congestion and collapse, but are imperfectly described. M. Longet has also found emphysema of the lungs, the relations of which to pulmonary collapse will in these cases hereafter be considered; and there can be little doubt that we have all the phenomena of bronchial obstruction and collapse following the division of the nerve which, according to the views above proposed, is the chief regulator or excitor of the bronchial deobstruent function."*—*Glasgow Medical Journal, July* 1863, *p.* 137.

DISEASES OF THE ORGANS OF DIGESTION.

22.—MINERAL ACIDS IN DYSENTERY.

By Dr. James Henderson, Medical Officer to the Chinese Mission Hospital, Shanghai.

[The following is from the Annual Report of the Hospital at Shanghai—a hospital which, from the great number of patients

* Edinburgh Medical Journal, Vol. xii., 1851, p. 442, et seq.

and the variety of the cases treated, must well tax the energies of its sole medical officer, and reflects the greatest credit on his professional skill. Other extracts from the same Report will be found in this volume of the *Retrospect.*]

I found cholera and dysentery prevailing to a great extent and proving very fatal. Soon after the middle of September, I became much struck with the rather unusual type which dysentery in most cases assumed. A few days after the disease commenced, typhoid symptoms usually appeared, great prostration supervened, frequent pulse with a dry brown tongue, and sometimes slight delirium. The whole nervous system seemed prostrated, plainly indicating stimulant treatment, and yet the ordinary stimulants produced no beneficial or decided effect. Wine, brandy, ammonia, camphor, mercury, and opium, seemed in many cases useless, either to modify the bowel complaint, or rouse the nervous system; indeed, mercury and ammonia seemed to do mischief. Quinine when retained, appeared to do good, but only in some cases would it remain on the stomach, the mortality was great, and decomposition of the body unusually rapid. On examining the blood of some patients, and comparing it with blood taken from a healthy individual, the former gave a much more decided alkaline reaction than the latter. Even the urine of patients with typhoid symptoms gave in many cases an alkaline reaction, thus indicating a condition of super-alkalinity in the body, or at least, a deficiency of acid. This led me to adopt an acid mode of treatment, which proved decidedly beneficial and successful; and as hydrochloric acid enters so largely into the composition of the tissues of the body, I preferred it to the other acids. It is best to give it with some bitter tonic and a little laudanum, if necessary, every three or four hours, and after the second or third dose, a change for the better is in most cases visible. After adopting this method of treatment at the end of September, very few died, if the treatment was commenced, before complete prostration of the nervous system ensued. The patients themselves seemed to feel the good effects of the acid, one man who was admitted in a very weak and prostrate state, with frequent and painful stools, used to call out for more medicine, declaring that it put new life into his body. In about two thirds of all the cases of dysentery which presented themselves, between the beginning of September and the middle of December, symptoms more or less of a typhoid character were present, and, in a large number, they were very marked and decided.

Some cases of pure typhoid fever occurred during the months of November and December, and in the treatment of this disease, the beneficial effects of hydrochloric acid were strikingly

manifest. In the treatment of typhoid fever they seem to me as decidedly beneficial and *specific*, as the effects of quinine in ague. Through the "London Medical Times and Gazette," I have recommended a *full* trial of this remedy, in typhoid fever, and in dysentery, with typhoid symptoms, to be made in the London hospitals. The good effects of hydrochloric acid in typhoid fever, are easily explained. Ammonia in large quantities is constantly formed and emitted from the body of a patient with typhoid, and indeed in all cases of low fever. In all cases and conditions, where destructive metamorphosis of the tissues of the body proceeds more rapidly than the nutritive metamorphosis, an excess of ammonia is given off from the body, and the blood is found to be more alkaline than when the functions of the body are in a normal state. The breath even, when analysed after fasting or great exertion, contains a larger proportion of ammonia than after rest. Moreover, it has been proved by injecting ammonia into the veins of animals, that symptoms are produced exactly similar to those in patients suffering from typhoid fever. Thus clearly indicating that in typhoid fever there is an excess of alkali in the system, in other words, there is not acid present in sufficient quantity to to neutralize the alkali, and surely in such a condition a treatment by acids is clearly indicated. The blood of patients suffering from scurvy and purpura, is almost exactly the same as the blood of a patient in typhoid fever. These diseases are universally treated by acids, and why should not also low forms of fever?

In most cases, after the second or third dose, the tongue begins to clean, there is less thirst, the diarrhœa abates and there is less depression and langour. When there was delirium or low muttering, I gave the acid and bitter infusion in half a wine glass-full of port wine, instead of cold water, which improved all the symptoms even in the most acute cases. In many cases of dysentery, ipecacuan wine given with the acid was useful.—*Report of Shanghai Hospital for* 1862, *p.* 5.

23.—ON THE TREATMENT OF ACUTE HEPATITIS IN ITS SUPPURATIVE STAGE.

By Dr. J. C. Cameron, Deputy Inspector-General.

The question as to the propriety or not of opening an hepatic abscess is one by no means decided. In a small Treatise on Diseases of India, published last year by Mr. W. J. Moore, of Bombay, we find it stated that "All operative interference is now universally condemned. The integument should be allowed to become reddened, and show positive evidence of

pointing before matter may be artificially evacuated." Dr. Budd condemns the practice, except when it is evident from circumscribed œdema, or a slight blush on the skin, that union has taken place between the integument and the abscess. Mr. Moore further states that it is impossible to conceive the existence of any case which would justify thrusting an exploring needle into the liver. Dr. Budd gives the above opinion on this point because he thinks the entrance of air would give rise to dangerous suppuration, forgetting that the entrance of air is not prevented by a spontaneous opening. Frerichs, in his work on Diseases of the Liver, translated by the New Sydenham Society, says, "When the abscess takes a direction outwards, we ought not to delay in making an artificial opening. In most cases, when fluctuation can be detected, the abscess has already attained a considerable size; and the longer its evacuation is delayed the greater are the dangers of its bursting into the abdominal cavity, of an extensive destruction of the liver, and of the formation of a dense, rigid, not easily cicatrised cyst. Indeed, we must not always wait for the supervention of fluctuation, or for the œdematous infiltration of the abdominal walls; because these signs, especially in the intercostal spaces, are sometimes late in making their appearance; in such cases the prominences of the false ribs and the obliteration of the intercostal spaces suffice to justify the operation." We have quoted enough of this article to show the decided opinion of Frerichs on the subject. Dr. Cameron has not read Frerichs' work, as he considers the opening of hepatic abscesses "opposed to the present ruling of recognised authorities on such matters." We should, ourselves, before pushing a trocar into the liver, or making an incision of limited extent, insert a circle of needles pretty close to one another, in order to excite adhesion of the peritoneal surfaces, if such did not previously exist, and afterwards puncture within the area of the circle. Dr. Cameron observes :]

Hepatic abscesses may be considered practically under two heads—suspicion and certainly, faith and sight. In both alike we are told not to interfere, but to stand by as spectators of a duel between hectic fever and an enfeebled constitution, contenting ourselves with supporting the latter in its struggles, and using local applications to favour pointing. It is admitted that few survive such a combat, and that while it is going on, a daily-increasing collection of pus is hollowing out the liver, or endeavouring to work its way into the lungs or bowels, the patient being liable to destruction at any moment from rupture into the pericardium, peritoneum, or pleura. Yet we are told that it is less dangerous to run all these risks for weeks than to

venture on puncturing a plainly discernible abscess, or hazarding a search for one deep-seated. I say, on the contrary, that when we have just grounds for believing that abscess of the liver exists, we ought not to lose a day in evacuating it by puncture, and that we are both justified and safe in endeavouring to hit upon it with a trocar when deep-seated, avoiding the gall-bladder and large veins. Dr. Murray, our Inspector-General in Bengal, who was an able practical physician, advocated this practice in the Madras Medical Journal twenty-five years ago, and stated that the Indian *hakims* had immemorially resorted to puncture of both liver and spleen for the dispersion of enlargement with induration. I have never tried it on the spleen, but I have repeatedly plunged a trocar deep into an enlarged liver without finding an abscess, and never had the slightest ill result beyond a little local pain, yielding readily to opium, or a few leeches round the puncture. I have also found such puncture followed by gradual absorption and disappearance of the enlargement. In men who have died with abscesses that I failed to reach, I have found it extremely difficult to detect the marks of such unsuccessful explorations, and this, too, when there have not been any adhesions; so that I believe the danger said to attend on such an operation has been diagnosed rather from analogy than from any actual consequent mortality.

But, granting the dangers to exist, the question arises whether they are greater than those resulting from non-interference; and I have no hesitation in saying that they are infinitely less. How many men die without any attempt at pointing, though their liver may have been converted into a mere purulent sac! and who shall say that their lives might not have been saved by operation when perhaps there was not above a few ounces of pus secreted? I have seen the ribs denuded and carious in such cases, while the surgeon had waited for weeks to see the abscess point; the man dying, worn out by fever and diarrhœa. Every officer of long hospital experience in the East must have his memory stored with such melancholy victims. I would certainly never allow a patient to die of hepatic abscess without making every attempt to evacuate it, and that at the earliest possible moment, when as yet the constitution retains some vigour. A trocar with canula of the medium size I consider preferable to either scalpel or lancet for opening the abscess. The latter may be used, where the skin is thick, to divide integument, and thus allow the trocar to enter with a gentle force. Should it have passed into an abscess, the pus will flow readily through the canula with a little help from a probe and the aid of gravitation. When the abscess seems pretty well emptied, the canula should be carefully fastened in by twine passed through perforations in its rim, and also by broad

sticking-plaster over it, leaving a small central opening. It may be found painful, difficult, or even impossible, to replace a canula that has slipped out, particularly in deep-seated abscess. A large warm poultice should be laid over the side, and the man placed on it, with a circular pad or pillow so placed as to obviate pressure on the canula. A strong dose of morphia should be given immediately after the operation, which is generally attended with great relief, and followed by refreshing sleep. The poultices should be changed twice or oftener in the twenty-four hours; and at his morning visit the surgeon should see to the opening, and aid the discharge by very gentle general pressure over the side, avoiding all poking or thrusting with the ends of the fingers. About the third day the canula may be withdrawn and replaced by a tent of lint dipped in oil, which should be changed daily. A liberal diet, with porter, wine, and if possible, food that the patient will relish, should be supplied. If things are to go well, the discharge will gradually lessen and the patient gain strength; the probe will show that the depth of the cavity is decreasing, while the general enlargement of the side has quite subsided and disappeared. By-and-by a clear mucous gleety-looking fluid replaces the pus, and finally the wound closes. Should the case be likely to end badly, either from the existence of a plurality of abscesses, the great size of the one opened, or an absence of all constitutional power to repair damages, it is denoted by the continuance of hectic and wasting discharge; but, under any circumstances, the operation seems to afford relief to symptoms, and to give the patient an extension of life, and ease in dying. This was particularly shown in some of Dr. Murray's cases, especially in one officer, who had a large abscess burst through his right lung before Dr. Murray visited his station. Being greatly distressed by a feeling of suffocation, and harassed by incessant cough, with constant purulent expectoration, that gentleman punctured the liver, and, by giving vent to the abscess externally, placed the patient in comparative comfort, though too late to do more than smooth his path to death.

When the operation has been decided upon, and there is no particular prominence in any region of the liver, but merely a general fulness of the side (and this perhaps only distinguishable by going to the foot of the bed, and comparing from thence the right and left outlines of the trunk), a very useful examination may guide us as to the likely spot. We should trace all the intercostal spaces, and if any superficial œdema be found, the abscess may be expected under it, and close at hand. The slightest intercostal fulness should be noted, and the patient desired to breathe deeply, while the finger is fixed with

gentle pressure flat along the spot. If the breath be caught precisely under it on deep inspiration, that is the spot for puncture; and, in the absence of local fulness, the place where the inspiration is most impeded must be our guide, with due attention to anatomical relations. It is remarkable how often one can determine the exact seat of greatest pain in breathing, &c., within the size of half-a-crown or less. Failing any such guide, the surgeon must rely on the general aspect of the side, and that inexplicable impression which experience alone can supply, and which so often proves correct, though one is quite unable to define its exact grounds.—*Lancet, June 6, 1863, p.* 631.

24.—ON GALL STONES.

By Dr. J. L. W. Thudichum.

A knotty point which Dr. Thudichum has helped to solve, is the nature of the morbid process to which gall-stones owe their origin. In this process two things have to be considered. (1.) The decomposition of the bile, and consequent precipitation from it of the different materials which form the nuclei of gall-stones. (2.) The mode in which such precipitates come to form concretions. The cause of the decomposition—that is to say, the pathological condition of the liver in which it originates—is still a mystery. Dr. Thudichum suspects it to be some putrid ferment generated in, and absorbed from, the intestinal canal. But, be the cause what it may, the fact that the first step in the formation of a gall-stone is decomposition of the bile and precipitation of certain of its ingredients is now undisputed; and by the light of the chemical changes which he has ascertained to take place in putrefying bile outside the body, the author attempts to explain the exact nature and successive steps of this decomposition. His explanation is too long for quotation. We would merely remark that it appears to us very reasonable, being (as he fairly claims it to be) "derived from all the data on record, with only so much of hypothesis as seemed justified by the amount of incontrovertible knowledge." As to the second point, viz., how concretion of the precipitates is effected, he shows the untenability of the old hypothesis, which ascribed it to inspissation of mucus or bile, and maintains that "the binding material of the nucleus of gall-stones is cholic acid, or chloidic acid, or both."

The author's description of the symptoms of gall-stone colic is of great value, because based exclusively upon cases in which the gall-stones were found after death. The general opinion, that these concretions produce symptoms only when lodged in the *common* duct, has (he observes) of late "become very doubtful,

as it has been found that calculi in the *hepatic* duct or ducts produce symptoms of a peculiar kind, differing from the symptoms of gall-stones in the gall-bladder and common duct by the absence of pain, and having the greatest resemblance to chronic intermittent fever. In one case treated by Frerichs for a long time by means of quinine and other febrifuge remedies, the rigors and other symptoms simulating fever were caused solely by calculi in the hepatic duct; their presence had not been suspected during the life of the patient."

Retardation of the pulse he holds to be a pathognomonic symptom in this disease. In forty-five cases observed by Wolff, "the symptom of diminished frequency was so constantly found during frequent observations, that in doubtful cases (*i.e.*, in absence of jaundice) it was mainly relied upon for the diagnosis."

Jaundice he believes to be by no means of such frequent occurrence during the passage of gall-stones as is commonly supposed. It was present in only twenty out of Wolff's forty-five cases. "The number of cases in which no jaundice appears is probably still larger in comparison to those in which it appears, as cases of the former kind easily escape diagnosis, while those accompanied by jaundice are never lost sight of."

Dr. Thudichum's remarks on the treatment of gall-stone disease, though advancing nothing positively new, contain some useful practical hints. He illustrates the necessity of leaving remedies, and directions for using them, with persons who have once had serious gall-stone colic, so that, in the event of any sudden return, they may be employed without loss of time. The only known internal remedies effectual in mitigating the the pain during the paroxysms are anodynes, such as opium, belladonna, and ether; but much caution, he shows, is needed in their administration, because when they have been taken in large doses they are apt, after cessation of the pain, to produce dangerous symptoms of narcotism. Both reason and experience, in his opinion, contraindicate any abstraction of blood, either local or general, during the passage of the concretions. Their solution in the living body he believes to be impossible; their expulsion during the use of certain mineral waters (Carlsbad, Marienbad, Ems, Vichy, and others) he admits, but confesses himself unable to explain. He summarily condemns the practice of giving mercury in cases of jaundice from calculous obstruction, "or in any other cases of jaundice from whatever cause, syphilis excepted. Calomel is not a cholagogue, but diminishes the secretion of bile. . ." We cannot go the same length as Dr. Thudichum in condemnation of this remedy. To give it in jaundice from obstruction is manifestly senseless and mischievous. But, be the action of mercury what it may, in many cases of functional jaundice (especially in children) we

find a moderate dose of calomel set the patient to rights so promptly, efficiently, and safely, that even Dr. Thudichum's strong disapproval will not persuade us to discard its use.—*From Dr. Thudichum's recent work on "Gall Stones, their Chemistry, Pathology, and Treatment."—Med. Times and Gazette, Aug.* 8, 1863, *p.* 151.

DISEASES OF THE URINARY ORGANS.

25.—WHAT IS DIABETES?

By Dr. Robert Venables, M.A., Physician to the Royal Kent Infirmary.

Until the time of Prout, at least two species of diabetes were admitted by nosologists,—the mellitic and insipid; and this division is recognised by some even in the present day. Under this division, every form and variety of diuresis was referred to the *genus* Diabetes, the only distinction being the saccharine or the insipid state of the urine. This view naturally led to great confusion, for diuresis of every kind—no matter what the cause, or however transient the diuresis itself—was pronounced diabetes. We know, however, that diuresis often proves a mere temporary affection—in hysteria, for example—and soon disappears.

There is a form of diuresis characterised by the large amount of urea in the urine. So abundant at times is this principle, that the urine gelatinises, as it were, into a solid crystalline mass on the addition of strong nitric acid. In many such the specific gravity, upon which much reliance has been placed as indicative of the presence of sugar, is very high, often rising to 1030 or 1035. I have seen it as high as 1038, and in one instance 1042. These are extreme cases, and probably of very rare occurrence.

In excess of urea (azoturia) the urine voided at each micturition cannot always be considered excessive. Indeed it is often below the natural quantity; but the constant desire to pass water, and the frequent micturitions in consequence, render the whole amount of urine voided in a given time much above the normal standard.

We meet with other cases of diuresis in which the urea is far below the normal amount (anazoturia). Such are sometimes attended with the voiding of very large quantities of urine, and, as may be readily imagined, of very low specific gravity, 1·010, or even lower. There is a marked contrast between the two urines just described. The first abounds absolutely in urinary principles, the latter is deficient in these.

Reagents show that the former is—at least comparatively—rich in the urinary pigments; whereas, in the latter, these are greatly diminished, and in some instances afford scarcely a trace. Uric acid, too, is often spontaneously deposited in cases of diuresis with excess of urea, indicating a true acidity of the urine, and a phlogistic diathesis. In anazoturia, on the contrary, the urine is often alkalescent, loaded with carbonate of ammonia, and prone to spontaneous fermentation, whence in all probability the carbonate of ammonia. Prout mentions instances in which enormous quantities of urine have been voided—in such instances, sixteen, even twenty pints in the twenty-four hours. Excessive quantities of urine have been passed by young children in similar circumstances.

Many of such cases have been looked upon as diabetes, and detailed as such, and Prout makes a similar remark. Hence the necessity of establishing a distinction between true diabetes and these spurious forms. I recommended that the term be restricted to those affections in which the urine is saccharine. Hence, I define diabetes to be a disease in which a saccharine state of the urine is *the* characteristic symptom.

This was a step in the right direction. There is good reason for believing that another error frequently prevails. Though the term diabetes be restricted to those urines only of which sugar is a constituent, as a counterpoise, it is sometimes, if not often, held that all saccharine urines are necessarily diabetic,—a source of nearly as much error (and far more serious in its effects) as that which Prout (to be hoped not unprofitably) struggled to correct. Prout's dictum, if it may be so named, is not unfrequently misunderstood. He did not intend that all saccharine urine should be regarded as unquestionably diabetic, nor that saccharine urine and diabetes were reciprocal terms, and therefore universally predicable of each other. I had Dr. Prout's co-operation in several cases of saccharine urine, but neither of us for a moment entertained the notion of any alliance with diabetes.

Diabetes may be defined a disease in which a saccharine state of the urine is an *essential characteristic;* without this saccharine state it is quite right to question, indeed to deny the claim to the diabetic character, and I believe this is now admitted by the most experienced in this affection. What, then, the inference? That many of the instances of successful treatment are to be explained upon these principles that they were *not* cases of diabetes, nor even allied in any way to this affection, except in the one circumstance of saccharine urine.

Of simple saccharine urine I see numerous instances; many of these merely transient, which pass off without any treatment whatever; others more permanent and more obstinate. Some

of these require treatment, not only medical, but by strict, sometimes severe regimen. Some recover, and get rid of the sugar altogether after protracted intervals; with others the saccharine diathesis—if it may be so named—is more obstinate, and may continue without the least inconvenience, or even the patient's consciousness of his position. I know the case of a gentleman, now far advanced in years, whose urine, to my own personal knowledge, has been saccharine for the last eight or ten years. He suffers no inconvenience whatever; the urine varies in specific gravity, and the quantity of sugar increases or diminishes apparently guided and regulated by changes in the habits of the patient for the time being.

Dr. Pavy tells us "that a diabetic patient may, by a purely animal diet, keep down and limit the amount of urinary sugar voided to 1,000 grains per day, and thus the patient not in any way know of the existence of his complaint, otherwise than by the necessity of restricting himself to the regimen essential to this object."

Prout himself tells us that a saccharine condition of the urine is not necessarily diabetic. Thus he says:—"Indeed a saccharine condition of the urine exists in dyspeptic and gouty individuals much oftener than is supposed, and hundreds pass many years of their lives with this symptom more or less constantly present, who are quite unaware of it till the quantity becomes increased."

What, then, are we to infer from these facts? That many of the cases treated successfully as diabetes were really explicable upon these principles; that they were cases of ordinary uresis; some of the saccharine forms, others the insipid, but neither in any way allied to true diabetes. What, then, is diabetes, and how is the real to be distinguished from the spurious disease?

The first question to be answered is whether the urine be saccharine or not, because, if there be no sugar there can be no diabetes, and there is an end of the matter. Then how are we to determine the presence of sugar? A variety of means affords us a choice, and we can readily satisfy ourselves upon this point. It is, however, no part of the object of this paper to detail at any length the different plans; still I think one or two hints may save the analyst a great waste of time, and no little amount of unnecessary trouble.

First, the taste, if it gives the sensation of sweetness, settles the question at once: but it must be recollected that urine may hold a considerable quantity of sugar in solution, and yet not taste sweet; but, on the contrary, saline and bitter. This I have found often the case, and when the taste gave no sensible evidence whatever of sugar, chemical tests gave very satisfactory indications of this principle in tolerably large quantity. What, then, is to be done? When the specific gravity or any other

condition of the urine renders the presence of sugar questionable or doubtful. The more expeditious, or at least the readiest plan, which I always adopt, and which I recommend to the busy practitioner, whose object must always be to economise time, is the fermentation test. I introduce into a small phial, of from half-an-ounce to an ounce capacity, sufficient of the urine to nearly, but not completely, fill it. Next introduce a small fragment of the German yeast, shake so as to diffuse the ferment, and put into a tumbler of water heated to about 90° or 100° Fahr. It will very soon acquire the temperature of 70° or 75°. The bottle may now be corked and transferred to the waistcoat or trousers pocket. Fermentation, if sugar be present, will soon begin, in times varying from one to two, three, or four hours. If this does not happen, the phial with its contents may be kept at the fermenting temperature for from twelve to twenty-four hours; it is unnecessary to point out the means of doing this, as it may be accomplished in various ways. The fermentation takes places with more or less rapidity, and more or less activity—violence—in a ratio no doubt proportioned *cæt. par.* to the quantity of sugar held in solution. If after a reasonable time, there be no evidence of fermentation, I look upon the question of diabetes as completely settled. Sugar cannot exist in solution, exposed to the influence of a ferment at the temperature mentioned, without undergoing the vinous fermentation, with the evolution of carbonic acid gas and the generation of alcohol.

We shall now suppose the alternative fermentation to have taken place, is sugar necessarily present? By no means. Urine may ferment, more especially under the influence of a fermentative, even though there be not a particle of sugar present. Therefore the object of the above is only to decide whether additional inquiry be necessary.

Several methods have been recommended, and Trommer's seems to be the best, and perhaps as manageable as any. If fermentation and the copper test confirm each other, the cautious practitioner will avail himself of several others, if not at his first examination, at some of his subsequent ones. This general confirmation will not leave room for a possibility of doubt. It not unfrequently happens in complicated conditions of the urine that the colouring pigments and the cloudiness not removeable even by filtration will so embarrass and so vitiate the results, that doubt, even serious error, may ensue. The removing of all these causes of obstruction may therefore in certain cases be found advisable, sometimes absolutely necessary. There are means, no way difficult, of effecting this object. In my lectures on the Chemical History, &c., of Urinary Diseases (Medical Gazette, 38, 39), I suggested acetate of lead for clari-

fying, &c., the urine, and precipitating by hydro-sulphuric acid gas. This seemed to many a troublesome and otherwise inconvenient process, and I then proposed to remove all embarrassing agents by acetate of lead in slight excess, and removing this last by phosphate of soda in the equivalent proportions, or rather in slight excess. By these means a perfectly clear, transparent, and, in most instances, colourless urine will be obtained, and the tests for sugar will act with unfettered energy and give satisfactory results.

The above plan removes albumen, and all other urinary constituents that can offer any obstacles, and will be found far more expeditious and much more effective than evaporation to dryness, boiling the residue in distilled water, filtering, &c., not unfrequently recommended.

So far, we have only determined the presence of sugar; but is the disease diabetes? It is clear the answer must be determined by collateral circumstances. Sugar, as already observed, is but one,—though an absolutely essential one,—of the elements in the diagnosis.

The collaterals laid down by Prout are perfect transparency; pale straw colour, with a greenish tint, and a faint, peculiar smell. The odour that of newly mown hay; sometimes of sour milk. Taste in a greater or less degree sweet; specific gravity from 1020 to 1050, but there is no precise limit to the possible height of the gravity, the elevation above the normal of course depending upon the amount of sugar in solution. It may be assumed, however, that really diabetic urine should, *cæt. par.*, always have a standard not under 1·030. This may appear a singular proposal, when I refer to a case in which the gravity of diabetic urine was under 1009. But in this instance the patient was at death's door—more appropriately, death was at the patient's door. As the fatal issue approaches, I have often observed that the gravity falls very low; the daily urine diminishes in quantity; urea decreases; uric acid nearly disappears; and even the quantity of sugar becomes greatly reduced. These may be considered as portending the fatal issue close at hand.

To recapitulate concisely the symptoms on the first appearance, or in its incipient stage, of diabetes:—*saccharine diuresis*, an absolute essential; inordinate appetite, ultimately becoming voracious; urgent thirst, at last insatiable; arid, rough, unperspirable state of the skin; emaciation; lassitude, listlessness, and disinclination to any kind whatever of exercise or exertion, bodily or mental. These symptoms from being at first slight, as the disease advances become aggravated, ultimately terminating in organic disease of some of the viscera—not unfrequently terminating in disorganization. The tongue is coated with a

whitish mucus, from which it cannot be freed; a frothy, glutinous saliva exudes from the angles of the mouth, encrusting them, and giving a peculiar thickness to the voice, so that the patient articulates as if he had marbles, or some other foreign substance in the mouth. There is another, a local symptom, which, though not an invariable attendant, yet is present sufficiently often to deserve notice,—I mean an affection of the penis in men; of the orifice of the urethra in women. It often appears in the former as phymosis, and, not unfrequently, as a sort of erythematous blush, attended with a thin, curdy secretion, of a viscid character, not from the urethra, but from the external coating of the glans itself and the internal lining of the prepuce. This was the condition of an officer, a captain in my own old corps, the Royal Artillery. The moment I saw the condition, I believed it to be a commencing gonorrhœa, for which I know this condition has been mistaken; but I was saved from committing any blunder by his stating he was suffering from diabetes. Anaphrodisia is by no means an uncommon concomitant of diabetes.

But the object is not a detailed or complete history of diabetes, but to show the necessity of limiting the application of the term, and confining it to its legitimate boundary.

My own inference is, and from no very narrow experience, that diabetes is an incurable disease, at least so far as our present knowledge and means extend.—*Med. Times and Gazette, May* 2, 1863, *p.* 446.

26.—NEW TEST FOR DIABETIC SUGAR.

MM. Trousseau and Dumontpalier have been recently making some experiments with *tincture of iodine* as a test. This tincture when added to urine which is acid, imparts a deep colour to the fluid, and if the urine in jaundice be treated by some drops of the tincture, the green matter, termed *biliverdine*, is rendered very manifest. During the trials which produced the above results, some diabetic urine was treated with some drops of the tincture. The urine, almost colourless at first, after the addition acquired the colour of barley-sugar; but this colour gradually disappeared, the urine again becoming completely colourless at the end of a few seconds. The experiment was repeated again and again with the urine of various diabetic patients, and always with the same results—the power of this urine in producing the discoloration of the tincture being in proportion to its density. Tried with urine from various sources, the conclusion has been arrived at that diabetic urine alone possesses the power of rapidly rendering the tincture colourless. The researches are still being carried on with the

hope of being able to measure by means of the tincture the exact amount of glycose contained in any given urine.—*Union Médicale.—London Med. Review, May*, 1863, *p.* 610.

27.—ON THE USE OF CITRATE OF AMMONIA IN CASES OF IRRITABLE BLADDER, WITH URINE OF LOW SPECIFIC GRAVITY.

By R. H. Meade, Esq., Surgeon to the Bradford Infirmary.

Some of the most troublesome cases of irritation of the bladder that come under the notice of the surgeon are those dependent upon disease of the kidney; the vesical pain and irritability arising from the altered state of the urinary secretion. I do not here allude to those forms of functional disorder, where different kinds of sand or gravel are secreted; but more especially to those cases in which the urine is of low specific gravity and deficient in urea; the accustomed stimulus of which seems to be missed by the bladder. Among these many cases of Bright's disease may be classed, in which the first symptoms that excite the patient's attention, and are present for weeks or months before other indications of disease are noticed, are pain in micturition, with a too frequent desire to empty the bladder.

All forms of irritable bladder are difficult to relieve, unless the cause can be removed, and, as this is not always practicable, any remedies that have been found useful are worth recording. The root of *Triticum repens* has been recommended by Mr. Henry Thompson in some cases, but for several years I have found more relief, in the forms of disease to which I have briefly alluded, from the citrate of ammonia than from any other medicine. My attention was first directed to it by the treatise on stomach and renal diseases of the late Dr. Prout, in which he recommended it as a good diaphoretic in some forms or stages of Bright's disease. Finding that it relieved the irritability of the bladder, which existed in some of the cases of albuminous urine in which I prescribed it, I tried it especially in cases where this symptom was very prominent, and frequently found it successful in its removal or alleviation. I have sometimes combined it with infusion of buchu or tincture of henbane, but though these or other remedies may sometimes increase its efficacy, I often find as much benefit from its use when it is given by itself.

The form in which I prescribe it is one drachm of sesquicarbonate of ammonia with one drachm and fifteen grains of citric acid, mixed with six ounces of water. An ounce of this mixture to be taken three or four times in the day.

With regard to the *modus operandi* of the remedy, I beg to quote the following extract from Dr. Prout's work (it occurs in the form of a note at the bottom of page 95 of the fifth edition :)—"I have reason to believe (he says) that when large quantities of the citrate (and perhaps other salts) of ammonia are taken by dyspeptic patients, it is sometimes converted into urea. The greatest excess of urea I ever saw occurred in the urine of a dyspeptic hypochondriac, who was in the habit of taking large quantities of the citrate of ammonia. On leaving off the ammoniacal salt, the quantity of urea immediately became and continued normal."

Should the remark made in this extract, which has only lately fallen under my notice, be correct, it is only in cases where there is a deficiency of urea that the citrate of ammonia will be beneficial; and as far as my experience goes, this is the fact. I always prescribe it in cases of irritable bladder, where the urine is of low specific gravity. Too many of these cases occur in connexion with serious organic disease of the kidneys, where palliation of the symptoms is all that can be hoped for; but I have seen remarkable improvement of the health take place under a steady use of this remedy for some time, where chronic desquamative nephritis, or even suppurative inflammation of the pelvis of the kidney, had been going on for many months.

We occasionally meet with a case of irritable bladder (of course I exclude here cases of hysteria) in which the general health appears pretty good, and where the only apparent disorder of the urine is an increase in its quantity, with a constant lowness of its specific gravity, from a deficiency of urea. In these cases the urine may be kept a considerable time without becoming at all fœtid, and is destitute of the usual urinous smell when first passed. I think with Dr. Prout that this affection mostly terminates in organic disease of the kidney, or rather in the first stage of it. One well-marked case of this description which came under my care after various remedies (for the relief of the vesical irritation) had been tried by several medical men, yielded almost immediately to the citrate of ammonia.

I may remark, in conclusion, that it is curious to find that while so able a physician as Dr. Prout should have noticed so remarkable a fact, in his chapter on disorders of the urine accompanied with excess of urea, as the excessive formation of urea in cases where large quantities of citrate of ammonia had been taken, he should not have turned it to a practical account, and recommended the same thing as a remedy in other cases where there is a deficiency of urea.—*Medical Times and Gazette, July* 11, 1863, *p.* 37.

SURGERY.

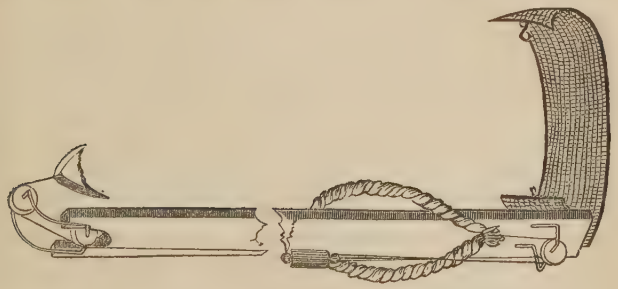
DISEASES OF THE BONES AND JOINTS, ETC.

28.—ON DISEASE OF THE HIP-JOINT.

By Richard Barwell, Esq., Assistant Surgeon to Charing Cross Hospital.

[In our treatment of disease of the hip-joint we have no direct power over the inflammatory process, but we can do much towards annulling the influences which keep up the morbid action. Inflammation even of a very small spot of the joint produces muscular spasm, which, in its turn, causes wide-spread mischief. The femur is forcibly dragged upwards, and the inflammation thereby aggravated. If we can prevent this, the inflammation can generally be easily managed.]

The mode of preventing such upward pressure is evidently by a counteracting downward force; and the only bearable method of applying this is, according to my experience, by elastic extension, which I adapt to the splint already described to you, but which I will now bring before you again. It consists



of thigh and pelvic portions. To the top and bottom of the thigh part brackets are affixed, each carrying a pulley; the upper one runs outwards away from the body; the lower one inwards, so as to lie two or three inches below the sole of the foot. A

perineal band, embracing the upper part of the thigh and splint, terminates in a piece of stout catgut, which passes *over* the upper pulley, runs *down* the outside of the splint, and is tied to an india-rubber accumulator. A piece of strapping plaster forms a loop under the sole of the foot, while its two ends adhere at the outside and inside of the leg, and are further secured by strapping the limb over them in the usual manner. To the loop under the foot another piece of catgut is fastened, which, passing *under* the lower pulley, runs *up* the outside of the splint to the india-rubber. Now it is evident that by fastening this catgut to the accumulator at any degree of tension, a downward force, antagonizing the muscular spasm, is kept constantly acting on the limb, exactly equal to that which was required to stretch the spring. I shall immediately be able to show you that this splint, properly used, will procure rest and ease even in the most acute and irritable phases of the disease: and in these particular states the whole apparatus —viz., wooden thigh-piece, with metal pelvic portion—is necessary; but in the subacute or chronic phases, where our aim is to prevent pressure, but not absolutely to guard against every possible movement of the joint, the pelvic portion is unnecessary. The thigh-piece alone, with pulleys and pelvic band, may be used with perfect success. Whether the more simple or more complex apparatus be used, it may be bandaged at once upon a limb which has not become very deformed; but if the contrary be the case, if the thigh be much drawn up, this cannot of course be done. And in such cases the splint may be fixed by the mere force of the india-rubber spring, without any bandage. Let the splint be placed on the bed by the patient's side, the pelvic band properly adapted, and its catgut brought over the upper pulley, &c., while the catgut from the foot is made to pass under the lower one: by stretching the india-rubber between these, we not only secure the splint, but also extend the limb until it becomes sufficiently straight to be bandaged to the instrument.

I do not intend to offer you downward extension as a perfectly new treatment; but it has never been applied with the same intention, nor in the same phase of disease, nor in a manner adapted to produce the particular effects which I maintain to be its only and its immense advantage. To various forms of splint, movable footboards have been fitted, which, when the patient's foot is made fast, can be screwed downward; but the rigidity of the force renders it unbearable. Nothing can be less scientific and more cruel than to exert a constant unyielding force upon a morbidly sensitive limb; therefore, just at the time when the starting pains and other signs show that extension would be most valuable the screw

footboard is utterly intolerable. Another method is to suspend a weight to the foot by means of a cord passing over a pulley. One great objection to this is the difficulty of making counter-extension; no patient will long bear the weariness produced by tying him to the head of the bed. My splint presents none of these difficulties, the patient being confined nowhere but in the diseased limb, and the force being the reverse of rigid.

When the limb is contracted it will, under the power of this extension, gradually come straight, and therefore the accumulator wants occasional re-extension. If the lower catgut terminates in a narrow piece of tape or webbing provided with eyelets, and a steel hoop be fastened to the lower end of the accumulator, the necessary alteration can be very easily made by a nurse or other attendant. If you ever try to bring down a contracted limb during active hip disease by screw power or by weights, you will put your patient to grim pain, and produce no beneficial results; if you give chloroform, straighten the limb, and fasten it to a splint, the patient will awake to atrocious pain, for which you may employ large doses of opium without effect, and you will in all probability be obliged to release the limb, when it will be drawn up again. I have again and again drawn down a contracted limb by means of my extension apparatus during the height of the most distressing symptoms, not merely without increasing the pain, but absolutely with the effect of procuring rest and ease. You will remember some of the children who have been under my care. I wish to refer to one particularly, Jenny K., aged seven, who had for some time past had a contracted hip, and was under treatment for recurrent disease. She was suffering intensely, and, as is always the case with children in this stage when the starting pains are severe, she drew up her limb more and more till the front of the thigh was lying on the chest, and the heel almost touching the tuber ischii. I began the extension in spite of these difficulties. The child, who had great dread of anyone touching the limb, cried at first, rather apparently from alarm than pain. She soon became composed, and the thigh descended gradually. She slept better that night than she had done for a long time, and the next day the limb was much straighter. Look also at the case of the boy in the children's ward, who was put under my care on the 23rd of April. The thigh was very much drawn up, and the child suffered a good deal, and was very restless at night, crying a great while. On the 27th I put on a splint without a bandage or pelvic portion—that is, a mere Desault's splint, provided above and below with pulleys, kept on simply by the force of the india-rubber acting on the perineal band and foot. The limb gradually came down, and the eyelet-holed tape had to be

shortened. The child was much easier, he slept better, and began to gain flesh on the 30th of April.

The limb had come down so much that I was enabled to bandage it to the splint, and since that time two singular experiments have been forced on me in his treatment. The extension has been twice discontinued: the first time because I required an india-rubber spring for an acute and very painful case, and could only lay my hand on the one in question. The boy was without extension for two nights: in the first he was rather restless, and cried frequently; the second he spent almost entirely crying. The next day the extension was reapplied; that night he slept perfectly well. Extension was afterwards discontinued, because the dirty little fellow had wetted and soiled his bandages and pads, and this had not been discovered, so that when I looked at him he was somewhat excoriated. As soon as the extension was discontinued, restlessness and pain recommenced, and after a day or two *the limb began to be drawn up again in spite of splint and bandages.* Extension again redressed these evils, and the boy went out in October, with a straight, painless, but at present a weak limb.—*Lancet, October* 17, 1863, *p.* 442.

29.—ON EXCISION OF THE KNEE-JOINT.

By Richard G. Butcher, Esq., Surgeon to Mercer's Hospital, Dublin.

[The present article gives an account of the fourth successful case of excision of the knee-joint. It is a fine example of all that may be achieved. The patient, Joseph Magher, aged twenty, was admitted to Mercer's Hospital with incurable disease of the knee-joint. The disease originated in a long and wearying walk a year and a half before. When seen by Mr. Butcher there was an enormous effusion of pus and serum within the joint. The limb was flexed, the inner condyle diseased, the skin covering the joint purple in colour, and there was intense pain on the slightest movement. The bones did not however seem extensively engaged beyond the articular surface.]

The patient, supported by students in the horizontal posture, was brought into the operating theatre; the limb steadied at its angle of flexure on a long piece of board, to guard against the least shaking of it—the same which he had used on his removal from the country. I lay stress upon this mode of management, as confirmatory of the disorganized condition of the joint, which could scarcely bear the least tremulous motion even, without eliciting pain of the most acute character. Chloroform was now used with its most perfect effect—calm, total insensibility.

Standing on the left side of the patient, I divided the soft parts by a bold deep stroke of a heavy scalpel. The wound commenced below, over the head of the tibia, and was carried directly upwards for five inches, laying freely open the inner wall of the joint. An incision, similar in extent, commencing over the head of the fibula, was carried upwards through the outer wall of the joint; the two were then connected by a transverse cut below the patella; this at once laid freely and fairly open the joint; the superior flap was dissected upwards; then flexion of the limb was forced, to put the fibrous structures externally and within the joint fully on the stretch, and so facilitate their more ready division. The former included shreds of the lateral ligaments, and spread out fibres of the involucrum, whilst the latter embraced the crucial ligaments which had only partially perished, a limited destruction which will most satisfactorily account for the non-displacement of the articular surfaces of the tibia and femur from their rightful axis. The parts being thus divided, the lower flap was detached somewhat downwards, whilst the edge of the knife was kept very closely up to the posterior surface of the tibia and back of the condyles; the immediate connection of parts were thus thoroughly freed from their adherence to the line beyond the articular surface on either bone; and this is all that is requisite, as then the finger will detach, by vigorous pressure, the soft parts from the bones to the required extent, in this their posterior aspect. By this simple manipulation the artery is not only secured from injury, but it remains undisturbed in its bed, and the popliteal space is not encroached upon or its anterior wall broken up. The extremities of the long bones being thus denuded to the required extent, I dissected out the patella from the upper flap; it was scarcely diseased—only to a very small extent; the margin of its cartilage was highly vascular, and its edges softened; but, independently altogether of its aberration from a healthy state, I removed it as a part useless to be kept. The extremities of the femur and tibia presented a very different condition; here the amount of disease was most marked; the cartilage over the condyles of the femur had nearly all perished, while that which remained hung in shreds; the osseous tissue was eaten away in some places to the depth of a quarter of an inch. The tibia presented a like disintegration of its articular surfaces; not only were the inter-articular cartilages altogether removed, but the cartilage of incrustation was eaten away to a great extent, there being no trace of that covering the external articular surface, while that covering the internal one was detached altogether, lifted up in the centre by sharp debris of bone—the bone subjacent being eaten away freely, and all depressions and cavities filled with a dark sanguineous fluid.

I removed the exposed surface of the tibia by passing the blade of my own saw behind it, and cutting from behind forwards, removing a slice about half an inch in thickness; the proceeding was effected with great rapidity, and the section was all that could be desired; the bone was healthy, as revealed, and the surface smooth, and even as a die. In like manner, the section of the end of the femur was made from behind forwards, the line of division passing about the eighth of an inch higher than the sulcus between the condyles; the edge of the fine saw being made to enter the bone exactly corresponding to where the soft parts were pressed back from it, a few cautious rapid movements of the instrument completed its separation. Thus, about an inch and a half of the femur was removed; and in this was safely included all the bone that was diseased or implicated in the mischief. I shall here, again, impress the caution that was observed in the direction of the blade of the saw, so that when the femur was fairly extended in the horizontal position for adaption to the tibia, the section might be perfectly vertical, so as to allow the most even adjustment—surface applied to surface throughout.

The cancellated texture divided by the saw was most healthy in character. I next clipped away, with strong curved scissors, masses of gelatinous material incorporated with the disorganized synovial membrane, and the extensive bursa beneath the extensor tendons, which likewise was deeply implicated, being thickened, discoloured, and vascular, and filled with fluid. So degenerated was all this tissue that I dissected the entire away. The bleeding was arrested by ligaturing four or five arteries. The limb was now brought, with facility, into the horizontal position, and it was astonishing how evenly and well the bones lay in apposition—throughout every point in contact. The anterior wound was brought together with four points of the silver suture, and the extremities of the lateral wounds, internal and external, were in the same manner approximated and retained together, while the centre of each was left free and gaping, to allow of the ready discharge of fluids. The limb, rigidly held, was then lifted from the table, and the box used by me for such purposes steadily slipped in; pads were so arranged that when the limb was let down its posterior surface was evenly supported throughout, the normal gentle curve of the ham being preserved; at the same time the heel elevated, pressed forwards, the entire member lying as straight as possible. The sides of the box were in turn elevated, the foot support put in to maintain the tibia pressed up to the femur, pads on either side so as to secure rest, to prevent wabbling. The anterior splint, the use of which in former papers I have laid so much stress upon, was then laid on, properly padded,

the straps buckled round all, steadying the entire as one piece, while the body-belt was thrown round the trunk and fastened, so as to keep the long arm of the splint close to the side, and by so doing ensure the security of the limb in its proper axis.

The patient rapidly rallied from the effects of the chloroform, and was conveyed, perfectly supported in the horizontal position, from the operating theatre, and placed in a comfortably heated bed. So efficiently did the anæsthetic act, that when the man awoke to consciousness he was astonished to hear that the operation had been performed, as he had not the least remembrance of pain.

A careful examination of the portions of bone removed confirmed, in a most striking way, the great accuracy of the diagnosis, and beautifully illustrated the total disintegration of the articular surfaces, with deep and wide-spread caries of the osseus tissue in numerous places, all indicative of incurable disease, and an efficient cause of the withering fever that threatened life.

[The last report of the case is the following :—]

He has long since put aside the crutches, and can now walk about without stick or support of any kind. When he is at rest and dressed, it would be impossible to perceive any shortening or the least deformity, nothing that the most scrutinizing eye could detect ; and when naked the proportions of symmetry are almost preserved—the axis of the limb is somewhat straighter than the sound one, the gradual inclination of the thigh bone inwards being, of course, not preserved. The foot rests upon the ground, and is as firmly planted as the sound one. The muscular development of the leg nearly equals that of the sound one, while the thigh, by measurement, is fully as large. The vertebral column has compensated for the shortening of the limb, the spine of the ilium being nearly two inches lower than that on the right side ; yet the head and shoulders do not droop ; there is manifested no change from their strictly normal or horizontal position. The man walks with great freedom from the hip, the motions of which joint are as perfect and as much under control as if the limb had not been rendered rigid at the centre. All the movements of the ankle joint and tarsus being sedulously preserved, contributes, in a very marked manner, towards facilitating progression.—*Dublin Quarterly Journal, May* 1863, *p.* 269.

30.—ON RESECTION OF THE KNEE-JOINT IN CHILDREN.

By Thomas Smith, Esq., Assistant Surgeon to the Hospital for Sick Children.

[During twelve years, from a very extensive field of practice, consisting of that class of society most of all liable to joint disease, but three cases have occurred at the Hospital for Sick Children, where the operation of resection of the knee-joint has been thought justifiable.]

The object of the operation is to save the patient's limb, to give him a firm and unyielding support for the weight of his body by obtaining bony anchylosis between the cut surfaces of tibia and femur; thus it accomplishes all that amputation can do, *i.e.*, the removal of the local disease; and in addition it aims at providing a natural instead of an artificial support for the body. Any operation purporting to be a resection on the knee which does not fulfil the above conditions cannot fairly be considered as such, nor can the favourable results of the operation be anticipated. For instance, if the articular surface of one bone be removed, and the opposite, from its comparative freedom from disease, be spared, no bony union can take place until the cartilaginous surface of the bone that was spared be separated by ulceration, and its denuded surface be brought in contact with the sawn end of the opposite bone. This process is an exhausting and tedious one to the patient, I need scarcely say, and it is for this reason that the patella should be removed in these cases, as its presence in the wound retards recovery, and in no way betters the condition of the limb when recovery has taken place. Dr. H. Hodges, of Boston, in an essay on excision of joints, has given us some statistical information on this subject. In sixty-one cases of resection of the knee where the patella was not removed, the per-centage of deaths was 39 per cent. greater than in the cases where this bone was taken away. The same gentleman, in contrasting a large number of cases of recovery from this operation, where the patella was and was not removed, finds that the non-removal of the patella adds thirty days to the period of convalescence.

So far as my influence extends, I would exert it to persuade you that the operation of resection of the knee is not one of expediency, as it is called, nor one lightly to be undertaken, since it—with the contingency of a secondary amputation which it always involves—exposes the patient's life to as much danger as does primary amputation of the thigh. Neither is the operation suited for acute inflammatory disease of the joint, but I would persuade you to regard the operation as a substitute for amputation in chronic disease of the synovial membrane, cartilages, or articular ends of the bones which, either by its

exhausting character endangers the life of the patient, or is in its nature incurable. The disease, if of the bones, should be limited to their articular ends, while visceral disease, advanced age, or a very feeble constitutional condition alike preclude the performance of this operation.

For injuries of the joints the operation has been but occasionally put in practice; indeed, it is seldom that the knee-joint is exposed to accidents sufficiently severe to justify resection that are not at the same time so dangerous to the vitality of the limb or to life itself as to necessitate amputation.

It has been performed for gunshot fractures of the articular ends of the bones, for wounds of the capsule with bruising of the bones, and for compound dislocation; but, with a few exceptions, the general success of these operations has not been remarkable, nor such as to encourage a repetition of the proceeding under similar circumstances, though at the same time, the success has been sufficient to justify the operation in exceptional cases.

Resection of the knee is seldom applicable in the case of young children; firstly, because in them diseases of this joint, when in progress, are more amenable to treatment than in adults; secondly, when destruction of the joints has taken place osseous anchylosis is more easily attainable in the actively growing bones of the young than in the completely ossified bones of older people; and thirdly, that any extensive removal of bone from this part of the limb of a child so as to interfere with the cartilaginous line between the epiphysis and shaft of either the tibia or the femur will be very likely to lead to complete arrest of growth in the limb, or so to check its growth as to produce in adult life a serious and irremediable inequality in the length of the lower extremities.

That this arrest of development should take place, and that the subsequent inequality in the length of the lower limbs should be occasionally so startling, is not to be wondered at when we consider that in the immediate neighbourhood of the knee-joints are the two most actively growing epiphyses in the whole body. In one case operated upon by Mr. Pemberton, where three and a-quarter inches of bone were removed, six years after the operation the limb was shrunken, blighted, and nine inches shorter than the opposite one. It was a result of this kind in a young patient that led Mr. Syme years ago to abandon the operation altogether, and since then other cases have come to light in which the same accident has occurred. Indeed, our present state of knowledge justifies me in saying decidedly that if, in the operation, the layer of cartilage separating the shafts and articular ends of the bone be intruded on, in all probability the growth of the limb will be seriously inter-

fered with. I would refer any one who is interested in this subject to a most useful paper in the Medical and Chirurgical Transactions for 1862, where Mr. Humphry has collected the histories of many cases which bear upon the effect this operation exercises on the subsequent growth of the limb. On the other hand, as bearing strongly on this point, and in order rightly to estimate the value of this objection, I would remind you that without doubt long-continued disease of the knee-joint in childhood of itself often leads to great inequality in the length of the two lower limbs in adult life.

Perhaps of all diseases of the knee-joint the most intractable is that form of synovitis termed pulpy thickening of the synovial membrane, or white swelling. As you are aware, in the later stages of this affection suppuration generally occurs in the joint, the cartilages ulcerate, the bone becomes eroded, the ligaments give way, and the leg becomes dislocated outwards and backwards upon the femur—the patella slipping over the front of the joint towards the outer condyle of the femur.

Now, it is to this form of disease in its later stages that resection is particularly applicable as a method of treatment, and for these reasons:—This disease is generally limited to the joint cavity and articular ends of the bones; it rarely of itself leads to bony anchylosis, and the dislocation which is so liable to take place, is, so far as I know, irremediable. Do not misunderstand me; extreme flexion of the limb alone can be satisfactorily treated, and the limb can be restored to a right line, but I know of no way nor any apparatus by which the leg can be brought forwards again when once it has slipped behind the articular surface of the femur.

The greatest local difficulty in the management of these cases is to counteract the tendency of the bones of the leg to slip back behind the lower end of the femur, the latter bone having a disposition to ride over the tibia. The splint therefore on which this limb has been placed has a pad upon it opposite and beneath the head of the tibia, while over the front and lower part of the femur is a short splint, which you may observe was fixed in position with a buckle and strap to allow of pressure being maintained without disturbing the dressings. One may fairly hope that the limb so put up will not need readjustment for at least a month. In the performance of this operation I would venture to advise you to leave the closing of the wound in the soft parts until after the splint has been applied and the limb finally fixed. This will allow the surgeon to assure himself of the due apposition of the bones and of the cessation of hemorrhage, which latter, if it occurs after the patient is put to bed, is troublesome, and hinders the reparatory process considerably.—*Med. Times and Gazette, Sept.* 5, 1863, *p.* 241.

31.—ON INFLAMMATION OF THE EPIPHYSES, OR THE ARTICULAR EXTREMITIES OF BONES.

By Thos. Bryant, Esq., Assistant Surgeon to Guy's Hospital.

The epiphyses of the bones of children are remarkably prone to inflammatory affections; and it is due to this fact that diseases of the joints at an early age are so common and so obstinate. It may without fear be asserted that at least two-thirds of the cases of joint-disease which are found in children are due to inflammatory affection of the epiphyses; and the symptoms by which this disease is to be recognized are not obscure.

As previously stated, these epiphyses may be regarded as independent parts; they are still distinct as bony centres, and have not yet united to the shaft and become part of the body of the bone. As a result, the local symptoms, which accompany these inflammatory affections are confined to the epiphyses, and seldom, even at a later stage, involve the shaft itself.

The earliest symptoms of any inflammatory affection of the epiphyses are somewhat obscure, a mere aching of the part being probably the only one which is to be observed. To external observation at this early stage of the disease, there may not be any change in the appearance of the part, although some increase in the temperature of the integument over the bone is often to be recognised, when it is compared with the temperature of the integument above and below the seat of the disease. If the nature of the affection be not recognised, and some weeks or perhaps months be allowed to pass without its detection, other changes will make their appearance; and of these the most marked is an absolute enlargement of the bone. It appears as a kind of dilatation and general expansion, and will be at once observed when a comparison is made between the corresponding epiphyses of the healthy and the diseased side. The bone at this stage will probably be somewhat more tender than natural, firm pressure over it exciting pain. The increase of heat in the part will at this period be also very palpable.

As time progresses, and if the disease be allowed to take its course, other symptoms will appear; and of these, some effusion into the articulation is the most positive, this being the result of a low form of synovitis, from the extension of the inflammation to the synovial capsule. The nature of the disease is, however, the same. The synovitis is palpably secondary to the ostitis of the head of the bone; and, if the disease in this part have not progressed too far, the synovitis will disappear when the ostitis is cured. It will be thus seen that the progress of the inflammatory affection of the epiphyses is precisely similar to the inflammation of the shaft; a gradual expansion of the bone,

attended by an aching pain, forming the chief symptoms. At a later stage of the affection, also, the analogy still holds good; for, if the disease be allowed to go on unchecked, suppuration and the death of the bone will to a certainty take place; and, in the majority of cases, this suppuration will pass towards the joint, when disorganisation of the joint-cavity will then be added to the difficulties of the case. It is an affection such as this which is often described as a strumous disease of a joint, but which is really essentially an ostitis attacking the epiphysis or head of a bone in a cachectic child, and which is as free from any strumous or tuberculous disease as any other inflammatory affection of a cachectic type.

If the nature of this affection be detected at any early stage, a complete cure may unquestionably be obtained in a large proportion of the cases which fall under observation. It is too true, however, that in the majority of cases the disease is not recognised in its primary condition; the want of positive symptoms which are capable of exciting fear in the uneducated mind being the probable cause of this neglect, as the mere aching of the bone or joint is regarded only as a "growing pain," and the enlargement of the bone and increase of heat are not positive enough to be observed. Should, however, the surgeon at this stage be consulted, he must be alive to the nature of the case. I always look upon a "growing pain" with suspicion, and, on examination, seldom fail to find its cause; osteal disease being the chief. I would, therefore, wish to impress upon all men the necessity of a careful examination of a limb the subject of such a complaint; and, in all cases of "growing pains," to fear some inflammatory affection of the osseous system. This fear may be wrong; but by carrying it into practice much benefit will be obtained, and many limbs and joints saved which would otherwise be lost. I could quote numerous cases illustrating these facts, both the evils of delay and the benefits of the practice; but no practical benefit could be obtained by doing so, if I have succeeded in convincing you of the truth of these remarks.

Treatment.—In the earliest stage of this form of disease, the treatment is very simple. Like the inflammation of the shafts of the bones, it is a constitutional affection, and one of debility. It is found in weakly and cachectic subjects, and in strumous or scrofulous, if a simple cachexia signifies the same. It requires, consequently, a tonic regimen and medical treatment; good air, good living, and tonics being absolutely essential. As local remedies, rest in the horizontal position and warm fomentations are likewise most important. Under such treatment, this disease may readily be checked in its earliest stage; that is, if no further organic change in the structure of the

bone has taken place, than its infiltration with inflammatory product, and its consequent expansion.

When the inflammation has extended to the synovial membrane, and an effusion into the articulation has been produced, the same treatment is to be carried out as we have recommended in the less complicated example; but the prognosis of the case is not so favourable, and greater care in the carrying out of the instructions is to be observed. A successful issue is still, however, to be anticipated; a bad result being looked for only in the extremely cachectic and unhealthy subject. Should the inflammation, however, end in partial or complete necrosis or death of the bone, suppuration and disorganisation of the joint will, in all probability, be the result; but such cases will claim our notice under another head.

It will be remarked that, although this disease is an inflammatory one, leeching, blistering, and mercurials have not been alluded to; and I do so now simply to express the opinion that they are not only useless, but absolutely injurious. Cauterisation of a joint affected with this disease is not a practice from which much benefit can be expected.

Inflammation of the Soft Pulpy Layer which exists between the Shafts of the Long Bones and their Epiphyses.—It is now well known by anatomists that, at the junction of the shafts or centres of bones with their epiphyses, there exists a soft pulpy vascular layer of connective tissue, by which the growth of the body of the bone is maintained, and its subsequent union with the epiphyses secured. At an early period of life, this pulpy layer is well marked; for as growth and development are at this time most active, the tissue is necessarily very vascular. Obediently also to the law that, in proportion to the activity of the action going on in the part, is its disposition to inflammatory disease, this tissue is unquestionably highly prone to inflammatory affections. I believe that a large proportion of the cases of acute suppuration about a joint in children have their origin at this seat; and this is often shown to be the case by an exfoliation of some portion of the surface of bone in contact with this pulpy layer. If the disease involve the whole connective tissue of the bone, a general exfoliation of the upper portion of the shaft may be produced; or, if this result do not take place, some arrest of development of the bone's growth may be the end.

The disease may make its appearance as an acute or a subacute affection. It is, however, generally acute, and is manifested by a marked swelling at the seat of the disorder, accompanied with great pain and constitutional disturbance. An abscess will then form, which may rapidly envelope the joint and upper part of the limb; and, when this has opened and discharged its contents, convalescence may result; or, what is more frequent, a

piece of bone varying in extent will come away, and a cure follow.

The majority of cases such as I have described appear about the shoulder-joint, although the disease may be witnessed at any other articulation.

It must be added that, in this disease, the epiphysis itself is not often involved; this pulpy layer being more intimately connected with the shaft, the growth of which takes place through it; the epiphysis having an independent vitality and independent vascular supply. As a consequence, disease of this structure involves the shaft in preference to the epiphyses.—*British Medical Journal, June* 13, 1863, *p.* 610.

32.—ON DISLOCATIONS OF THE THUMB AT THE METACARPO-PHALANGEAL JOINT.

By J. C. Wordsworth, Esq., Surgeon to the Royal London Ophthalmic Hospital, and lately Assistant-Surgeon to the London Hospital.

Many years ago, my attention was particularly directed to the subject of dislocations of the thumb and fingers, by a case that occurred in the practice of the London Hospital while I was the house-surgeon. The cause of difficulty in reducing them was so plainly illustrated in this case that I was induced to publish a short notice of it in the pages of the Lancet, together with two other cases that seemed to confirm my conclusions. It had been previously stated, by various writers, that the strong lateral ligaments were the obstacles to reduction; and by other surgeons the difficulty was attributed to malposition of the tendons. Amongst the latter were the late Mr. Stanley in our own country, and Messrs. Lisfranc and Dupuytren in France. At the time I wrote I was not aware that such opinions had been published; I therefore gladly avail myself of this opportunity of disclaiming any credit for my share in the elucidation of this important subject, and am content to attempt to illustrate and confirm their opinions.

The case to which I refer was one of *compound* dislocation of the first phalanx of the thumb upon the dorsum of its metacarpal bone, in which the tendon of the long flexor was found between the ends of the bones, and thus accounted for the difficulty in restoring them to their proper positions. A second instance illustrated the subject from another point of view, by showing that in some cases the tendons are not displaced, and that reduction is then easily effected; and my third demonstrated the practicability of a procedure to overcome this difficulty, by first restoring the tendon to its proper position. I will then briefly reproduce the essentials of these three cases;

for though I have had many opportunities, both in public and private practice, of confirming this view of the subject, and of testing the practical value of it by reducing dislocations which have baffled others, yet I could not cite any that afford more satisfactory data for the solution of the question.

I gladly embrace this occasion to offer my sincere thanks to many friends, who, being aware of my interest in these cases, have afforded me numerous opportunities of seeing them; and I believe I am at liberty to state they fully approve and confirm what I have to offer on this subject.

Case 1.—A *compound* dislocation of the first phalanx of the thumb, produced by a fall on the extended hand, the phalanx being on the dorsum of the metacarpal bone. A wound extended across, and opened, the joint on its plamar aspect. An attempt at reduction was made in the usual manner, simply by extension, and failed. A close scrutiny of the wound showed the tendon of the long flexor between the ends of the bones, having passed round the *ulnar* side of the end of the metacarpal bone, and by traction been drawn across the joint. Various attempts were made to remove the tendon from its new position without doing further mischief; but these being unsuccessful, it was divided with a bistoury. Reduction was at once accomplished, and no displacement recurred.

This case, then, sufficed to convince me of the presence of the obstacle as well as of its sufficiency, affording as it did positive proof that the tendon prevented reduction, and that as soon as it was removed no obstacle remained. I then naturally desired to know whether this dislocation ever occurs without the complication of the misplaced tendon; and if so, are such cases difficult of reduction? A little reflection on the conformation of these parts convinced me that it was not a necessary condition of the dislocation, but rather an accident depending on the force and direction of the violence that produced it. Again, I was also persuaded that it must be possible to diagnose this condition; for if the tendon remained *in situ* it would be perceptible, stretching over the end of the metacarpal bone, and drawn away from the first phalanx by the altered position of that bone. I had not long to wait for a reply to these inquiries, for my next case afforded all the information that I desired, and justified my anticipations.

Case 2.—A simple dislocation upwards and backwards of the first phalanx of the thumb. A careful examination soon after the accident occurred, and before any attempt at reduction had been made, enabled me to decide that the tendon was *not* displaced from its position between the tubercles on the lower end of the metacarpal bone, but could be recognised as a distinct band (especially when slight traction was made) passing

from bone to bone. Then, as to the reduction, slight force only was required to restore the bones to their proper positions —viz., by simple extension from the last phalanx.

Having, then, this positive and negative evidence of the difficulty arising from the interposition of the tendon, I next sought for the best means of overcoming it. I conceived that the tendon might be carried back to its proper place by manipulation merely, without having recourse to division, and so leave the structures uninjured. I therefore devised the following procedure, and determined to test its application as soon as an opportunity permitted :—The wrist being fully bent, so as to relax the long flexor tendon, let the surgeon take the thumb in one hand and abduct it from the fingers, while with the other hand he steadies the metacarpal bone. He then is to rotate the thumb, so as to make the tendon retrace its course *forwards* and *inwards* around the lower end of the metacarpal bone, using the first phalanx as a lever in this intention. If this do not succeed, let him hyper-extend the first phalanx, so as to stretch the flexor tendon, rotate the phalanx *outwards*, and then carry it round the *inner* tubercle of the metacarpal bone, so as to dislodge the tendon from between the ends of the bones.

Case 3.—A simple dislocation of the first phalanx upon the dorsum of the metacarpal bone. No trace of the tendon could be discovered. Attempts to reduce the dislocation by extension had been made, and were renewed, that the manipulation might be fairly tested after other means had failed. The tendon was readily replaced by this means, coaptation restored, and no tendency to displacement left.

I believe that I was thus enabled to place the argument on a basis so solid and satisfactory that it is impossible to resist its validity—indeed, that my cases reduced the matter to a demonstration. I will not dogmatize so far as to insist that all difficulty arises from the cause to which I was then induced to attribute it ; for I can easily conceive that cases may be complicated by the altered positions of the flexor brevis as well as by the lateral ligaments. Still, I am convinced how important it is in all scientific inquiries to be well assured of our conclusions ; that we may know how to apply our science with energy and decision ; and that it is both politic and philosophical to be content with *one* solution of a problem so long as it enables us to act with effect ; though it is equally right that we should remain open to conviction, however satisfied we may be with our opinions, when they are shown to be either controvertible or inadequate.

Since my attention has been directed to these cases, I have had much reason to believe that dislocations of the fingers at

the metacarpo-phalangeal joints are also complicated by the malposition of their tendons; and, acting on this conviction, I have succeeded in reducing them by mere manipulation after considerable force had been vainly applied.

I am induced to recall the attention of the profession to this important subject from noticing that the valuable surgical works that have emanated from the press of late have not embodied or endorsed this view of the difficulties. The ligaments are still considered the principal obstacles to reduction by authors generally, though I feel assured that a more extensive observation of these cases, by the great body of practical surgeons will confirm my own convictions, and lead to the adoption of a better and more successful mode of treatment.—*Lancet, October* 17, 1863, *p.* 443.

ORGANS OF CIRCULATION.

33.—CASE OF DEATH FOLLOWING THE SUBCUTANEOUS INJECTION OF A NÆVUS.

By Robert B. Carter, Esq., Stroud, Gloucestershire.

Ellen G., at that time aged four weeks, first came under my notice seven weeks ago. She was a well-grown and in other respects healthy infant, but the lower half of her nose was a mass of mixed nævus, which involved the columna and both alæ, and enlarged the feature to at least three times its natural size. The disease was apparent at birth only as a small speck, and was rapidly increasing. Its size admitted of great reduction by pressure, but it refilled as soon as the pressure was removed, and, when the child cried, was in imminent danger of bursting. A scratch from the child's own finger-nail had already produced severe hemorrhage.

The hot needle was freely used a day or two after the child's first visit, chloroform having first been administered. Even with this there was much hemorrhage from some of the punctures, and, the needle having once entered the nostril, there was free bleeding from the mucous membrane. Collodion was applied to the surface, and the treatment seeming to have checked the growth in some degree, the hot needle was used again much more freely than at first.

The resulting inflammation did not appear to do more than stop the growth of the part actually operated upon, and the disease immediately began to extend upwards so rapidly that in two or three weeks it covered the whole of the nose. The

new portion was chiefly subcutaneous, but the skin covering it presented a few red vessels, and was very thin. At the bridge of the nose the diseased mass was not less than an inch and a-half in width. Contractile collodion had been applied regularly, and proved perfectly useless.

The treatment proper to be adopted seemed a question of some difficulty. The infant had been vaccinated on the arm before I saw it. Pressure and ligatures were alike inapplicable; the actual cautery had failed. Superficial cauterisation would have entailed great risk of fatal bleeding on the separation of the eschar. The nutrient arteries were uncertain, and probably numerous. Removal of the growth would have been removal of the whole nose, not to mention the probability of the disease extending backwards. Under these circumstances, deep cauterisation seemed to be the only resource.

The use of caustic pencils pushed into the substance of the growth was contemplated, but decided against on the score of pain; and it was finally determined to inject a solution of perchloride of iron into the mass. This was done, on the 7th instant, without chloroform, to a small portion of the right ala. The pain seemed to be severe, but the effect appeared likely to be useful.

Yesterday morning, the 11th instant, as a preparation for another injection, chloroform was again administered. We did not anticipate any long-continued pain, and therefore did not place the child so fully under the anæsthetic as had been done for the cauterisation. The inhaler being removed, a subcutaneous syringe, containing ten minims of the same solution that was used on the former occasion, was introduced through the sound skin of the cheek just outside the margin of the growth, and carried about to the centre of the latter. The effect of the chloroform had partly subsided, and the child cried out at the puncture. The solution had so far acted on the barrel of the syringe as to impede the working of the piston, which stuck fast, and then yielded with a jerk, expelling five minims of the solution. A discoloured spot immediately appeared on the part of the nævus over the point of the syringe, and the next moment the child gave one shriek, one short convulsive struggle, and ceased to breathe. My partner, Mr. Gregory, who had seen the case from the first, was fortunately present, and we employed artificial respiration, Faradisation, and stimulants, until all hope was over. At the first moment I forced the mouth open and drew the tongue forward, producing a single gasp, and two or three other gasps followed, each more feeble than its predecessor.

In order to see if any similar accident was recorded, I turned to the various books treating of nævus that were then at hand.

They were: Wilson on "Diseases of the Skin," Wharton Jones's "Manual of Ophthalmic Surgery," Skey's "Operative Surgery," Fergusson's "Practical Surgery," and Druitt's "Vade-Mecum." The first four authors all mention the treatment by "injection of irritant fluids," among the plans that may be pursued, and give no caution as to any danger attending it. Druitt mentions that the practice has caused death by convulsions, and refers to a case reported in the 21st volume of the Medical Times and Gazette. He does not mention the situation of the nævus, nor what fluid was used, and the case appears to be an isolated one. I have not the volume to refer to.

The result of the present case has been in every way so calamitous, so distressing to the parents, and so painful to the Medical attendants, that I hope you will be able to find room for it, as a warning to others how they use what is, I believe, a generally recognised method of treatment.—*Med. Times and Gazette, Sept.* 5, 1863, *p.* 262.

ORGANS OF RESPIRATION.

34.—DESCRIPTION OF A LARYNGOSCOPE.

By Francis Mason, Esq., Assistant Surgeon to King's College Hospital.

The laryngoscope is becoming so generally adopted by the profession, that no doubt can exist of its value as an important aid in the diagnosis, and, consequently, in the treatment of disease. Notwithstanding what has been written regarding the examination of the vocal cords, epiglottis, and other appendages of the larynx, we have been scantily supplied with descriptions of the various instruments employed, and of the mode of their application.

The laryngoscope being, as its name implies, an arrangement for "looking at the larynx," the simplest apparatus by which this end may be attained is that which will be most readily received by all observers.

The instrument was made for me by Matthews, of Portugal-street. It is, in most respects, similar to that described by Dr. George Johnson elsewhere, and which he has done me the favour of showing me. The essential point of difference, however, is that the mirror, instead of working on a hook bent at an angle, is attached to the forehead-pad by means of a ball and socket-joint. The universal movement thus afforded enables the surgeon to direct the rays of light with the greatest accuracy,

and, by allowing him to assume a posture most easy to himself, to make a prolonged examination without fatigue.

The apparatus consists of a slightly concave mirror, three inches and a half in diameter, having no central aperture. To the centre of the back of this is attached an accurately-fitting ball and socket joint, provided with a screw to tighten the joint, should this proceeding be necessary. A stem, continued from the ball in front, is fixed to the forehead-pad, and from the extremities of the forehead-pad is fastened an elastic band, which encircles the head. Three or four laryngeal mirrors, varying in size, and set at a proper angle, complete the instrument. Each mirror fits the handle.

The mode of examining the vocal cords is, in most cases, simple enough, and may be thus briefly described. The patient being seated on a firm chair, a lamp giving a brilliant and steady light is placed on one side of, and a little behind him. The surgeon, sitting opposite, fixes the mirror on the centre of his own forehead, and desiring the patient to advance his head slightly, directs the rays of light through the mouth to the back of the pharynx. The laryngeal mirror, having been previously warmed to prevent its becoming steamed by the breath, is now passed rapidly over the tongue, and made gently to elevate the soft palate. It should be borne in mind that the objects, as seen in the mirror, are reversed from before backwards. The base of the tongue, perhaps, will be first observed; next will be seen the epiglottis; and then, with careful manipulation, assisted by the patient saying the word "Ah!" the vocal apparatus may be demonstrated. In some cases it will be necessary to hold the tongue forward with a towel; this proceeding, however, greatly distresses certain patients, the examination of whose throats may be better made either by depressing the tongue with a common spatula, or by requesting them to retract and bury this organ, so to speak, in the floor of the mouth. Should the sunlight be employed to illumine the larynx, the laryngeal mirror will, of course, be the only instrument required.

Thanks to the labours of Dr. Gibb, much has already been done in this country to prove the value of the laryngoscope in the investigation of the physiological as well as the pathological condition of the air passages, and much more remains yet to be accomplished. By moderate practice, however, anyone may make himself familiar with the instrument, and by properly-directed treatment in disease, alleviate much suffering and annoyance, which may have lasted for months, or even for years.—*Lancet, Aug.* 8, 1863, *p.* 159.

ALIMENTARY CANAL.

35—AN UNUSUAL FORM OF DOUBLE HARE-LIP.

By Richard G. Butcher, Esq., M.D., M.R.I.A., Dublin.

[The patient, a little boy of two years and seven months of age, was admitted to Mercer's Hospital with a most unusual and hideous form of hare-lip. The maxillary bones on either side were scarcely at all developed in front, and there was scarcely any attempt at separation between the cavity of the mouth and that of the nose. There was, in fact, an entire absence of the palate plates of the palate bones. There was no soft palate, not even any little pendulous flaps of it on either side. The vomer was materially changed in bulk and volume, so as almost to obliterate its characteristics altogether. The lower edge had attained a considerable size, so as to form, with the covering membrane a rounded mass, forming a projection centrally, firm and dense in structure. The alæ of the nose were widely dragged outwards. Much thought and consideration was necessarily required to plan the various steps of any operation undertaken with the view of remedying so complicated a deformity. Mr. Butcher observes:]

He who first operates has the entire of the deformed parts in their fullest development, such as they have been created—soft parts, corrugated and diminished in proportions; yet they are elastic, extensible, and permit of separation, of traction, to a vast extent. In this early state, by free and extensive dissection, abundant material can be borrowed from the cheeks and sides of the face to cover in the faulty gap in front, while the irregularly developed maxillæ, the protruding inter-maxillary bones, the abnormal septum, may all be pared down, split up, thinned; portions removed; spaces cut out, defined in form, for the reception of distorted, thrust-out parts; to be held in unity by wire sutures, by needles, until steadied together by a new and living bond, permanent for ever.

Should these early efforts of the operation fail, attempts made after seldom prove so satisfactory, and for these simple reasons:—Much has been taken away, the soft parts that remain which refused the union; from the cutting, from the piercing, from the non-extensibility consequent upon the reparative process, efficient to heal, is very imperfectly conditioned to endure an increased amount of traction, that which must be enforced, so as to bring surface to surface, and offer even the chance of union.

These secondary operations, as I have well determined from repeated examples, require more skill, more tact, more delicacy, at the same time boldness of manipulation, to accomplish all

that is demanded and required, than any primary case can possibly do. Hence the deep stress which I lay upon the responsibilities which devolve upon the surgeon who first undertakes to meddle with and endeavours to rectify those bad cases of hideous deformity consequent on arrest of development. I shall now proceed to detail the operative proceedings, which, after due reflection, I considered most applicable in this frightful case. On the morning of the operation the child had been abundantly fed on two occasions, so as to do away with the necessity of giving food for some hours. The little fellow was rolled in a sheet, not too tightly, merely so as to retain the arms, but not in the least to interfere with the ingress and egress of air to and from the chest in lusty crying; thus he was placed in the nurse's arms, who sat upon a strong chair, with his head resting upon her left shoulder, the chair being elevated to a convenient height. I commenced in this way:—I first struck a tenaculum into the central fleshy part, lifting it upwards, and making it tense at the same time; then sweeping the knife rapidly beneath, dissected it up to its attachment from the tip of the nose. I guardedly preserved every atom of it by semilunar strokes of the knife, by which method the curved and matted-down borders were not infringed upon, whilst the osseous projection was fairly exposed. The tenaculum was then disengaged from this soft portion, and it was not meddled with further in this stage of the dissection. I next proceeded to deal with the projecting osseous piece. All its features, and characters, and intimacy with the vomer being thoughtfully considered, duly weighed; the soft tegumentary piece being guardedly drawn up by an assistant, I cut, with a a small-bladed sharp bone forceps (constructed, by order, for me, and most efficient for such purposes) the vomer, where quickly expanding for fusion into this morbid development, almost directly backwards, there being but very slight inclination upwards, to the depth of about three-quarters of an inch; the blades of the forceps were then placed on either side of the projecting piece, and a thick slice removed from its anterior surface, the two incisions meeting above at nearly a right angle; thus a very large portion was taken away. Though this proceeding was more rapidly executed than the time taken for its description, the bleeding was most alarming. A very large vessel, nearly the size of the radial artery, nourished this unnatural development; and when it was divided the blood shot out vigorously in a rapid current. However I had anticipated, from antecedent cases, the likelihood of such an occurrence, and was prepared for it with the actual cautery. A fine-pointed instrument, heated to its full temperature, was resting in the furnace; quickly it was thrust into the divided

bone after the retracted artery, and efficiently it fulfilled its duty on a second repetition. Hemorrhage stayed, I proceeded still further to prepare this piece to fill up the space between the imperfectly developed maxillary bones, and so to afford an even support to the upper lip when restored. The forceps was next applied behind the projecting piece, and made, by two incisions, to cut a triangular piece out of the vomer, the apex above, the base inferiorly. My own forceps for dividing the stalk (figured in the Dublin Quarterly Journal, May, 1860) was next laid on, and the compact osseous bar clipped, while the less dense and soft parts on either side of the stalk were spared, the vascular supply descending to the piece, essential to be preserved, not interfered with, and thus its life secured.

The various cuttings just detailed rendered this piece most amenable to management—the taking away of the large portion in front, removed for ever what was obnoxious there, the peculiar angle cut out behind, and the clipping of the dense stalk in the centre, nearly through its entire depth—allowed the preserved piece to be forced back, most gently, without risk of its vital supply; and when the lateral borders of it were pared, and the marginal gum on the maxillary bones refreshed, it was astonishing how well this extensively pared dense piece rested in the recess. So accurately were all these details carried out, effected, there was no tendency or disposition of the piece to start forward; and, from the evenness of the cuttings, there were no sharp edges or irregularities anywhere. The solid parts being constructed, I again returned to the central soft piece, and seized it with a tenaculum, at its point, and cut it with straight scissors into a perfect V shape, preserving it to its very lowest point. The left portion of the lip was then seized with the tenaculum, just external to its curve, and lifted upwards and outwards, while the scalpel was carried beneath it, cutting extensively, widely, the mucous membrane, and freeing fully the expanded and pinned-down ala. This being all set free, liberated, the knife was still carried outwards, detaching the cheek, and thus creating that sufficient laxity—whereby an approximation of the parts might be secured—that more constrained relaxation favourable to union; the right portion of the lip and corresponding ala of the nose and cheek, were treated after a similar manner. Such being efficiently done, the curved scissors, preferred by me in such cases, was applied, first upon the left side, being laid on at the red border, just external to the point where the tenaculum was inserted; this portion of the lip being stretched and made steady, on the instrument being quickly, energetically closed, the separation of the rounded border was accomplished to its highest part into the nostril, at its point of attachment with the ala. The right portion of the lip was

treated in every particular in a similar way. During these steps of the operation scarcely a drop of blood was lost, so carefully was pressure made on both facial arteries. Next came the important stage of the operation—the arrangement of all the cut parts, and the adaptation of all the divided surfaces. The needles which I use for this adjustment were such as I have figured and approved of in my essays on the operative measures necessary in the treatment of hare-lip—the long, slender, steel needle. The first of these was passed from left to right, its entrance the fourth of an inch external to, and above the left ala; being thrust towards the right, it was made to transfix, a little above the apex, the triangular piece formed out for the septum of the nose; and being still further pressed on, the needle made its appearance at the same distance from the right ala, and at the same height from its under margin, as where it entered on the left side; thus, when the transfixion of the several parts was accomplished, the needle lay on a perfectly horizontal plane. It must be remembered here that the points of entrance and exit of the needle were so planned at such a height above the low margins of the alæ, that when it traversed the central triangular piece, it held it well up to the cut surface of the vomer in front, so as to establish a permanent union. By direction, then, the cheeks were well forced forwards, and I threw a thick silken waxed ligature across the needle, in the figure of eight form. From the decision with which I had the cheeks held forward the parts glided gently together towards the centre of the needle, to which parts they were compressed, and the ligature was made steadily to follow them, *not to drag them together*, but simply to prevent their retraction and separation—there again receding. The cord was thrown several times from side to side, so as to perfect the twisted suture. It was very apparent now how admirably the septum had been formed. The second needle was next introduced, fully three-quarters of an inch away from the edge of the cut surface, and made to enter at the junction of the red border of the lip and integument on the left side; with a steady pressure it was forced from left to right, deep through the lip, cautiously in a horizontal line, so as to strike the right or opposite half, critically in the same position, so as to make its appearance at the same distance from the red border, and guard against any unevenness or notch below. A strong waxed silk ligature was also thrown, in the figure of eight form, round this needle, the same precautions as taken with the first needle being adopted, of forcing forwards the soft parts to absolute contact, before the cord was cast around; several turns of it were made in the evenest way, and the adjustment could not be more perfect. Owing to the eliptical incisions created by the curved scissors, and the remote

ends of the double elipsis being brought together, a slight oval space intervened between the upper and lower needles; in the upper part of this the apex of the central fleshy piece forming the septum lay. I introduced a third needle, finer than the other two, midway between both, on a line with the other two, at the point of entrance and exit and depth throughout from the surface. A separate ligature was likewise thrown around it, in the figure of eight form, and the same pressure from behind forwards afforded to the soft parts, as in their application. When the ligature was applied the concave margins entirely disappeared; surface lay to surface in a vertical line, and, as a consequence, the inferior margin of the lip was rendered slightly prominent, the object aimed at by such a division and adaptation of curves. The ends of the needles were next clipped off with an ordinary wire nippers; thus the needles were inserted, thus the ligatures were applied, each needle having its separate cord. That reprehensible practice of passing the ligature from one needle to the next, and so on, I need scarcely say was not employed by me. It is a proceeding which warrants my deepest censure. Such a mode of application tends to approximate the needles, and so, in proportion to the tension employed, to shorten the cicatrix, or, in other words, to contract it in its vertical axis and increase the predisposition to notching at the red border; whereas the separate ligature thrown around each needle, flatly and evenly laid on, tends to press gently down the lip, and lengthen—increase its vertical measurement, and likewise to assist the evenly-adjusted curvilinear incisions in perfecting the union, and rendering prominent the inferior part of the wound and red border of the lip. During all this manipulation the cheeks were pressed steadily forwards, so as effectually to guard against any sudden jerk or additional violence, upon the constrained parts. Long since, in those cases, I have put aside the use of spring apparatus, from the difficulties I encountered in their steady application and adjustment to the heads of infants—owing to the facility with which they were put astray, and to their likelihood to do mischief; again, from the readiness with which they went out of order, and so lost their charm. The method which I have been adopting latterly, and which I find perfectly efficient in taking the place of the assistant's hands, in holding the parts forward, relaxing the cheeks, and grip upon the needles, is the application of adhesive straps, cut, figured, and applied after this manner:—Two pieces should be cut about an inch and a-half wide, and each long enough to reach from the summit of the forehead to beneath the chin, taking a semicircular course behind the cheek. The edge of the strap, which is to be anterior when applied, should be cut in a semicircular shape to the extent of the cheek, the centre or deepest portion being some-

what more than half-an-inch. One end of the strap should be fastened on the upper and fore part of the forehead, then brought in a curved manner outside or behind the cheek, and then carried, with moderate traction, forwards beneath the chin. The second strap should be applied, after a similar fashion, on the opposite side. If the plaster be good and adhesive it never slips, the broad ends take a firm unyielding grip, and the straight edge of the plaster behind, made tense by the traction forwards, offers a direct opposition to the recession of the cheek, while the curved anterior margin permits the strap thus put on to lie more evenly, and so accommodate itself to the prominence of the cheek thus forced forwards. In the case under consideration, and in which the strain upon the adjusted parts was extreme, this practice fulfilled every indication that the most perfect appliance could bestow. The operation and dressing being now finished, I was now satisfied with the appearance of the child. Not a drop of blood oozed from the parts, and he was well resuscitated by a few tea-spoonfuls of wine and water.

9 p.m.—The child was wonderfully well; he had taken milk freely several times. In five hours after the operation, the child being quite clear from the effect of the chloroform, and having perfectly recovered from the shock, as evidenced by reaction, I had, as is my usual custom, small doses of laudanum, at intervals of three or four hours, administered, so as partially to narcotize the child. Previous to each additional dose the infant was freely fed, and quickly calmed again to repose. On the morning following the operation, February the 1st, nothing could be more satisfactory than the condition of the little patient; he had calm, quiet, steady respiration, an excellent pulse, well arterialized blood; he had consumed a large quantity of milk; pain was averted, and undisturbed sleep was enjoyed, from the sedative influence of the narcotic. Here, again, I would wish to urge the propriety of administering opium to children after painful and serious operations. *Children bear opium in proportion to their years, I would say, even better than adults.*

I fear this axiom will startle some; but, as all other propositions in these reports, I offer it, too, with all truthfulness as the result of my own experience. In my Memoirs on Hare-lip the same mode of procedure has been inculcated—advocated; and in numbers of cases occurring in my practice, since the last was published, its superiority has been confirmed; and so likewise after the embarrassing operation that I am describing. Everything went on most admirably, until the evening of the third day, when erysipelas attacked the parts. The child was listless for some hours before, and refused his food; soon the blush of inflammation showed itself about the wound, external

to the needles; the nose was swelled; the eyes were puffed. At once a brisk mercurial aperient was given; wine with water, was occasionally taken. On the following morning (February 4th), and the fourth day after operation, the erysipelas had made considerable progress; the child had scarcely any sleep, he was tossing and restless all the night; the lip and cheeks were more swollen, more brilliant in colour; the eyes were more shut up; the forehead was involved slightly—œdematous, painful to the touch, and discoloured; pulse small, feeble. All the swollen parts and parts engaged were now smeared with the strong mercurial ointment—a drachm being applied morning, mid-day, and at night; and sherry wine was ordered in what may be considered large doses for an infant at this tender age; four ounces were consumed in the twelve hours; this treatment was continued steadily—perseveringly, for two days (February 6th), before the inflammation began to subside. Then the application of the mercurial ointment was suspended, and all on, removed with sponge and warm water. Still the wine was continued, and strong chicken broth, which the child partook most freely of, as well as of milk in abundance.

[On the seventh morning after the operation the needles were removed with the greatest caution. Union was then effected throughout; the septal piece was perfect, adherent to the bone, the angle of it was evenly caught between the lateral portions of the lip above and united beautifully there, while the remaining portion of the lip was united to the lowest point of its red border; straps of adhesive plaster were kept applied for about ten days, so as to sustain the parts and maintain forwards, with steady support, the cheeks; at the end of ten days, "at a little distance, it was almost impossible to discover that the little fellow had been subjected to operation at all."]

On examining the mouth, nothing could be better than the way in which the partially preserved central piece lay; it shut up all the hideous gap between the maxillæ, and its lateral edges lay in contact with, and united immovably to each, whilst its lower edge ranged with the alveolar arch and perfected the palate in front, at the same time that its anterior surface sustained the united lip in its now full integrity and proportion.

[One great secret of the success in this case was, that by the exhibition of opium there was never any dragging or tension on the needles, from the crying or restlessness of the child.]—*Dublin Quarterly Journal*, *May* 6, 1863, *p.* 292.

36.—ON HARE-LIP.

By Thomas Bryant, Esq., Assistant Surgeon to Guy's Hospital.

Hare-lip is always found in the upper lip, and is most frequent on the left side of the body; 63 per cent. of the cases taking place on the left side, and 36 per cent. on the right.

It is more common in the male than in the female sex, in the proportion of 70 per cent. of the former to 30 per cent. of the latter.

In the simple uncomplicated cases, the proportion is less marked; but as the cases become more complicated, the greater frequency of its occurrence in the male sex becomes more apparent; the proportion between the sexes being 80 per cent. and 20 per cent. It would also appear to be a rare thing to find a double hare-lip in a female child.

Treatment.—There neither is nor can be any difference of opinion between surgeons as to the expediency of affording surgical relief in the cases of deformity which we are now considering; although there is still great uncertainty and diversity of opinion between them as to the period at which it is the most advisable to submit the child to an operation. Some surgeons assert that operative interference is most successfully carried out at the very earliest period of the child's existence; and that the earlier the operation is performed, the greater are the chances of a complete success. On the other hand, surgeons of equal eminence maintain that the practice just laid down is fraught with danger, and that the correct practice is to wait till the child's powers are fully established; and that one or even two years should be allowed to pass before any attempt to repair the deficiency should be made. Between these two extremes lie the opinions of many men; and it is, therefore, with a view of obtaining some definite data upon which a positive opinion can be based, that I will now lay before you the conclusion to which I have been led.

But, before doing so, allow me to allude with all deference to the uncertain grounds upon which surgeons have been in the habit of founding positive opinions; for it is too true that these opinions are, as a rule, based only upon impressions; although it may be that these impressions are the result of extensive and perhaps most conscientious experience. Still I feel that I may appeal with confidence to all who hear me, when I assert that there are few things more fallacious than the general impressions which experience affords, however great may have been the field from which they have been gleaned; and that true impressions can only be gained from positive and definite materials.

I am unable to direct you to any work or even journal in

which definite data have been recorded, from which just conclusions can be drawn as to the period at which it is the most advisable to operate in cases of hare-lip, unless I were to mention my own previous contributions to this subject, which will be found in the third part of my Clinical Surgery.

It is, therefore, with some confidence that I am now able to add something to our stock of knowledge which may prove of use in guiding us to a correct decision. If I lay myself open to the charge of saying that surgeons have hitherto formed their opinions upon indistinct and indefinite data, I can only justify myself by pleading that the grounds upon which the opinions have been based have not been published; and that, therefore, I may be forgiven for doubting their existence.

The facts which I now adduce may form but a nucleus round which others may hereafter collect; and the conclusions I now give may have to be confirmed or corrected by future observers.

Analysis of Cases.—Four cases were operated on within the first two weeks; one on the fifth day, and two on the eleventh day, one of which proved fatal.

Eight cases were between four and five weeks of age; in two of these, the parts subsequently gave way, although the cases in the end turned out well.

Ten cases were operated on between the sixth and eleventh weeks, with success.

Fifteen cases were treated between the third and sixth month, with only one failure.

Six cases were operated on between the sixth and twelfth month, with a good result; and

Fifteen were also successfully treated after the first year.

From these facts it will appear that, during the first six weeks of life, the operation for hare-lip is by no means so successful as to warrant its general performance, unless an absolute necessity compels. Out of the twelve cases, one died; and in two the wound subsequently sloughed, although in both a good recovery was finally secured. At a later period of life, a successful issue was recorded in all.

At what period of the infant's life, then, should the operation for hare-lip be generally performed? In order that a satisfactory answer should be given to this question, it is necessary to consider the purposes for which the operation may be required; and they may be divided into two classes.

Firstly, the operation may be called for to preserve life; the imperfection of the mouth forming an insuperable difficulty to the child's sucking.

Secondly, it may be called for simply as an operation of expediency, to improve appearances and remove defects.

When demanded for the satisfaction of the first purpose—namely, to preserve life—there is no question of period which the surgeon has to decide. The operation must be undertaken at all hazards; but the successful termination of the case will be uncertain. For this purpose I have performed the operation on the fifth day with complete success, and other surgeons have been equally successful even at a much earlier period; but, under these conditions, the necessity of the operation overcomes all other questions, and the surgeon has no option but to do his best.

In the second and more numerous class of cases, however, the time for operation rests entirely on the surgeon's will; and it only remains for us to decide from the records of positive experience, the period of life at which the greatest success can be anticipated.

Judging from the materials which I have but just laid before you, it would appear that the operation when performed at any period of life after the sixth week is likely to be followed by a successful result; I would give the preference, however, to about the third month of life, the vital powers of the child having by that time become fairly established, and well able to resist the the tax upon their strength which is necessarily occasioned by any operation. At an earlier date—that is, during the first few weeks of life—the operation should be condemned; unless, as it has been previously explained, the existence of the child appear imperilled.

The Operation.—It will be hardly profitable to any of us if I were to take up your time by recapitulating all the varieties of operation which have been suggested by various surgeons for the relief of the deformity now under consideration; and I propose, therefore, to confine my remarks simply to what I have observed and practised, and to recommend what appears to be the best means out of the many which have received attention.

In simple cases, there are but two main objects which the surgeon has in view—to pare the edges of the fissure, and to adapt them so as to render the deformity as slight as possible.

I would give the preference to the scalpel for the performance of the first stage; for with such an instrument a cleaner section of the tissues is made than when scissors are employed; and this cleanness of the incision is a point of primary importance.

The form of section which is to be recommended is variously estimated by different surgeons. Some are content with a clean straight section of the lip's margin, being so satisfied with obtaining simple union of the separated parts, as not to care about making an attempt to supply the deficiency of tissue which is invariably present at the margin of the lips. Other surgeons recommend that the line of incision should be curved

inwards, so that the lower margin of the lips, when brought into position, will be made to project downwards, and thus tend to correct the evil which has been just alluded to. But I am disposed to give the preference to the plan of operation which I believe was originally suggested by Malgaigne, as by it the labial notch is almost to a certainty done away with, and the deformity most completely remedied. It consists simply in paring the edges of the wound from above downwards, leaving the inverted flap adherent at its labial border. When this is done, and the upper edges of the divided lips have been brought together, the lower flaps may be connected by a fine suture; and, if proved to be too long, they may be curtailed; sufficient material being left to fill in the gap which is too often the result of the other forms of operation. In my hands, this plan of operation has proved eminently successful, and it only requires in its application a little nicety in the adjustment of the parts.

An important preliminary point, however, demands attention, as the success of the case rests materially upon its due performance; for, however well the marginal incisions may be executed, unless the lip have been rendered readily moveable upon its labial attachments, a failure to the operation must be expected. This freedom of movement is, however, readily secured by making a free section of the mucous membrane of the lip from its osseous connexions. When this is done, the whole lip can be readily raised from its position, and all chances of tension are completely taken away.

The fear of removing too much of the lip's margin is one which is most certainly groundless, the usual fault of operating surgeons lying the other way; for the labial tissues are very extensible, and a free section of the parts is to be preferred.

The *second step* of the operation remains for us to describe; its object being to bring the edges of the wound together, and to keep them there. This end, is most readily and efficiently carried out by means of the interrupted suture. Silk or wire may be selected according to the fancy of the operator, one exciting as much or as little irritation as the other. The interrupted suture is to be preferred to the uninterrupted, as it is more readily removed.

The sutures should be inserted from a quarter to half an inch from the wound's margin, and carried obliquely through the lip, so the line which is bounded by the mucous membrane, but not through it, and then introduced at a like spot on the opposite side, and firmly tied. A fine suture at the labial margin should also be applied, in order to maintain as accurately as possible the line of lip.

All bleeding is generally at once arrested when the wound's

margins are brought into contact; but, if it be troublesome, one of the sutures may be made to perforate the bleeding vessel.

A little elastic collodion may be subsequently painted over the part, to prevent friction; but, as a rule, the practice of leaving the part open proves equally satisfactory. The employment of pins in simple cases may certainly be looked upon as unnecessary, as the simple means which have been described are amply sufficient.

In operating, therefore, upon uncomplicated cases of hare-lip, the following points appear the most important.

First, to separate the lip freely from its gummy attachments; *secondly*, to make a free section of its edges, according to the plan previously laid down; and *thirdly*, to bring the edges accurately together by fine interrupted sutures, introduced at a distance from the wound's margin, and deeply placed. If these points are observed, and the child is neither too young nor too sickly, a successful termination to the case may with some confidence be predicted.

Complicated cases of hare-lip.—The remarks which I have just concluded, concerning simple and uncomplicated hare-lip, are equally applicable to other cases of a more complicated nature; but there is a point of practice in *double* hare-lip which deserves a few moments' attention, as there is still a diversity of practice in such cases which, I confess, appears to me sometimes singular. Some surgeons invariably operate only upon one side at a time, fancying that a greater success follows such a line of practice than when both sides are treated at one operation. From what has passed under my observation, I cannot see any reason why both sides should not be simultaneously treated; but, on the other hand, believe that advantages are obtained by such a proceeding, which are not secured by the more timid and prolonged process. In the six examples of double hare-lip which I have tabulated, primary success followed in each instance; and in the cases which fell into my own charge, I had no reason to believe that the operation would have succeeded better if a different practice had been followed. In one case of a boy aged nine weeks, I employed a pin in order that the centre bit should be well held down to the lateral portions; and good success followed the attempt. In the second case, of a boy aged one month, I operated after the plan which I have previously given; but I preserved only the lateral flaps of the outer portions, joining these in the centre beneath the central piece. Primary union followed the operation, and a recovery in which the deformity was but little marked.

In no instance have I witnessed any evils resulting from the practice which I have just laid down; and I am at a loss to understand the principle upon which surgeons still adhere to

the older practice of carrying out a double and separate operation.—*British Medical Journal, April* 4, 1863, *p.* 340.

37.—A CASE OF INGUINAL HERNIA TREATED SUCCESSFULLY BY PROF. CHISHOLM'S METHOD.

By James J. Dickinson, Esq., Assistant Surgeon, Bengal Medical Service.

[Prof. Chisholm's radical method of treating hernia is simpler than Wood's or Wützer's, and is different in principle. The latter prevent the return of the hernia by filling up the canal with scrotal substance; the former simply by closely approximating the two pillars of the ring by means of silver wire, which remains permanently. It is a question, which only experience can decide, whether or not the cure is permanent. If this turns out to be the case, the operation will, on account of its simplicity, and the absence of all complicated apparatus, prove one of great value. The patient in this case was a Bhelstee, aged thirty.]

On examining him, I found he had a large inguinal hernia of the right side, which completely filled the scrotum. With gentle pressure the whole of the gut could be easily returned; and on pushing the flabby scrotum up before the forefinger, it could be passed through the tendinous aperture, more than an inch in diameter, into the abdomen, and the pillars of the external ring could be distinctly felt. The man himself was a spare man, though in good condition; and I mention the fact because I am of opinion that *pari passu* with stoutness, so will the difficulty of the operation be enhanced, and so will needles of various sizes and curves be required.

On the 27th of May I performed the operation, having on the previous day given him a dose of castor oil. After the case had been carefully examined by my friends, Assistant-Surgeon Jackson, of H.M. 13th Light Infantry, and Dr. Caird of the Camel Corps, by both of whom I was ably assisted, I proceeded to operate, the patient being under the influence of chloroform. The mode of operating is as follows: "The scrotum having been invaginated upon the finger, as the only mode of guiding the needle in its passage, a long strong curved needle, fixed firmly in a handle and armed with silver wire, guided by the finger, transfixes the scrotum at the apex of the invaginated portion, passes through the internal column, and appears through the skin of the abdomen, when one end of the wire is drawn out. The point of the needle is then drawn backwards, and disappears again in the canal. Its direction is then changed. Whilst still embedded in the scrotum and guided upon the finger, its point is made to traverse the external column of the ring near

Poupart's ligament, lifting the skin of the abdomen. By gliding the skin upon the needle, the point appears through the small puncture made by the first passage of the needle, when the other end of the wire is seized, and the needle is unarmed and withdrawn through the scrotum. The finger is now removed from the canal, and the two ends of the wire being drawn upon the loop, it dissects the cellular tissue up to the columns, which it hugs closely. By twisting the ends of the wire the columns are felt approaching, until they are brought into such close apposition as to allow nothing to pass between them; the spermatic cord in its exit filling up all the available space remaining of the ring. When the ring is felt closed, the twisted wire is drawn firmly outwards, and clipped off as close as possible to the skin, so that when traction on the skin of the abdomen is removed, the gliding back of the integuments to their normal positions conceals completely the ends of the small loop of silver wire." This is the description of the operation as given by Prof. Chisholm. The operation which I performed was, but with one slight modification, precisely similar. Those who witnessed the operation were much struck, on passing their forefingers up the canal, to find how very distinctly the pillars could be felt approximating as the wire was being tightened; and when it was tied, and the ends cut off, a perfect plug could be felt, presenting an impassable barrier to the egress of any portion of gut.

The progress of the case was everything that could be desired. For the first two days there was slight pain over the abdomen, which was subdued by small doses of opium; and there was also a good deal of thickening of the cord, which subsided after a time. The small wounds healed slowly; nor need this surprise us when we remember that the thermometer stood at 105° in the house.

On the thirteenth day after the operation he was able to rise from his bed and obey the calls of nature; and on the twenty-fifth day he walked from the hospital to my house and back again, a distance of a mile and a quarter, without suffering much fatigue. On the 20th of June (twenty-four days after the operation) he was discharged, being at that time able to draw as much water from the well as he required for his own use.

Remarks.—The operation as performed by me differed in one point from Prof. Chisholm's—viz., that instead of puncturing the scrotum at once with the needle, I made a slight incision with a scalpel through the fascia of the scrotum, and then passed the needle in. This suggestion emanated from my friend Dr. Jackson, who believed that it would render the performance of the operation less obscure, an opinion in which I agree. The only difficulty in the operation is, after having secured the inner

pillar and withdrawn the needle, to secure the outer pillar, which requires a peculiar manœuvre. I think it should be secured a line or two lower than recommended by Professor Chisholm, thereby obtaining a more perfect approximation of the parts by reason of the greater purchase that is acquired.

The needle I use is six inches long, and firmly fixed into a handle, in appearance resembling a common suture needle, having, however, on its convex surface a groove sufficiently deep for the silver wire to be perfectly embedded in, and thus avoid a resisting surface, which would be the case were this groove not there. I would recommend intending operators to have a set of four needles, similar to those my friend, Dr. Bourne, is having constructed for me, and from whose firm (Messrs. Bathgate and Co.) they are obtainable. I have purposely avoided commenting on the class of people for whom I think this operation applicable, as from a solitary though successful case it would be all but impossible to draw any inferences, and were we to do so they could only be regarded in the light of postulates.

In conclusion, the question will be naturally asked, Does this operation of Professor Chisholm's present greater advantages than either Wützer's or Wood's? My answer is, Yes, it does. And I think a careful perusal of the three methods will satisfy practical surgeons of the truth of my assertion. First, it is superior to Wützer's on account of its greater simplicity by reason of the absence of all complicated apparatus (no mean point to be borne in mind by military surgeons stationed hundreds of miles away from any city), as well as in the procedure itself; secondly, on account of the permanency of the plug, due to the presence of the silver wire always remaining there; and thirdly, no truss being required in the after-treatment. With reference to Wood's operation, of which it may really be considered a modification, I think, hereafter, when we have more data to go upon, that if it does not altogether supersede it, it will at least be found to have a sufficient number of advocates to entitle it to rank amongst the legitimate operations of the day.—*Lancet*, *Aug.* 15, 1863, *p.* 186.

38.—ON THE USE OF THE CLAMP IN THE TREATMENT OF HÆMORRHOIDS AND PROLAPSUS.

By Henry Smith, Esq., Assistant-Surgeon to King's College Hospital.

In the third edition of my work on the Rectum I called attention to an improved clamp which I had been using in the removal of hemorrhoidal tumours; and in the Lancet for

October 4th, 1862, is a description with a drawing of the instrument further modified. The instrument is much the same as regards shape as that originally recommended by Mr. Curling; but the edges of the blades, instead of being serrated, fit into one another by means of a groove and raised surface; and instead of being fixed by a catch, the handles are perforated by a light screw, so that the pressure can both be put on and taken off the tumour to be removed in such a gradual manner that any bleeding point may be readily appreciated and treated. The operation consists in seizing the tumour with the blades of the clamp or forceps, and removing it with a knife or sharp scissors; the raw surface is then wiped dry and thoroughly cauterized, either by nitric acid or the hot iron, according to circumstances; the parts are well oiled, and the affair is finished. The disease is removed at once, and the patient is not subjected to the irritation and danger of a ligature strangulating several portions of mucous membrane for a week or more. A very extensive experience of this method of treatment has convinced me so entirely of its superiority over every other plan, that I have thought it right to detail a few of the most severe cases which I have met with during the last year, so that those surgeons who take the trouble to look into the matter may judge for themselves about it. I am the more anxious about this as there is a feeling of prejudice against the treatment amongst those who have not witnessed it. On the other hand, I believe all those who have seen the operation as I adopt it in King's College Hospital and in my private practice have been much astonished and pleased with the results. My own impression is, that the ligature may be almost entirely done away with for hæmorrhoids and prolapsus; although my own practice is somewhat contrary to my conviction, as I have latterly employed the ligature in a considerable proportion of the cases which have occurred to me. The reason of this is, that I have been testing with great care the comparative value of the two modes of treatment, and have been selecting cases for each; and, as before stated, the conclusion is forced upon me that the advantages of the plan by the clamp are too marked to be lost sight of. The dangers of the ligature are entirely avoided; the subsequent irritation is lessened; the patient is not confined to his bed more than one-third or one-half the time necessary for the separation of the ligature; and the convalescence is much shorter. I must confess that the operation itself is tedious and troublesome, and that if great care be not employed the disease may be only half cured. I have reason to believe that in two of the cases operated upon by me during the last year a partial failure took place, from causes which I could not well control; but if great care be

taken to apply the details of the treatment, the cure is as permanent and satisfactory as that resulting from the ligature.

I shall now relate a few cases to illustrate my remarks, and shall first mention the particulars of a case, not occurring in my own practice, but where I assisted that most able surgeon, Dr. Wiblin of Southampton. This gentleman had seen me operate in the hospital, and he was so struck with the case that he determined to adopt the plan on the first opportunity; and he kindly requested my opinion on the case of Captain ——, aged forty, who had been suffering in the most miserable manner from bleeding and protrusion of the rectum for sixteen years. He commanded one of the large mail steamers, and his duties were rendered most arduous and distressing by the copious hemorrhage which took place while at sea. When Dr. Wiblin and I saw him in January he had just returned from a voyage, and was in a most wretched plight. There was a large mass protruding from the rectum, a portion of which consisted of two isolated tumours or prolapsed portions of membrane, of great size, and always outside the sphincter; and when the least straining effort was made, two other tumours came down; and attached to these were processes of altered membrane, looking like polypi. In addition to all this, the integument around the anus was much diseased and thickened.

I strongly urged Dr. Wiblin to use the clamp and actual cautery, and I assisted him in the operation on February 7th. The four distinct masses of mucous membrane were severally well secured by the screw clamp; and when the free portions were cut away, the raw surfaces, which were of necessity very extensive, were thoroughly cauterized by the hot iron; and although the parts were unusually vascular, the hemorrhage was completely commanded by the clamp and arrested by the cautery. The polypi and loose skin were cut away, and the operation was completed. It was of necessity very tedious, but the patient was under chloroform; in fact, the exhibition of this agent always renders such operations prolonged.

This patient made a rapid recovery. His bowels were acted upon on the fourth day, without hemorrhage, pain, or prolapse, and within ten days he was able to walk three miles. I have seen him since, and examined him, and there is not a trace of the disease.

This was certainly the most severe case I have met with, and I am much obliged to Dr. Wiblin for so thoroughly testing the merits of the treatment. But in some respects perhaps even a more satisfactory case occurred to me about the same time in the person of a distinguished General, aged seventy-two, who was sent to me by Dr. Furnivall, and who had been troubled with severe prolapsus for many years, especially whilst on

arduous service in hot climates. The entire circumference of the mucous membrane was prolapsed to a considerable extent, and very vascular. The operation was performed on the 21st December, at ten a.m., two large segments of the prolapse being clamped and cut away, and the actual cautery being then thoroughly applied. There was no bleeding. The General kept his bed for two days. On the next day the bowels were acted upon by castor oil, without inconvenience. He was at my house on the fourth day, without a trace of the disease. and on the evening of that day he went off by the night mail to his seat, two hundred miles in the country. I saw this patient the other day. The cure is complete.

Now, so extensive was the disease in each of these cases, that in the absence of the clamp and cautery the ligature would have been necessary, and the brief period consumed in the treatment may be well contrasted with the time usually taken up in the separation of the ligature and its results.

I will now, however, briefly detail a case still more striking, to show how slight are the inconveniences of this operation, and how little confinement is necessary.

A middle-aged man came amongst the out-patients at King's College Hospital a short time since, suffering from a large prolapsus on one side of the rectum. As he lived near, and was anxious to be cured at once, I determined to operate upon him in the out-patient's room. Accordingly I applied the screw clamp, and having thoroughly compressed the tumour, cut it away with scissors, and then well cauterized its surface with nitric acid. The patient was allowed to wait some time, and then he walked home to his residence. He returned to see me at the hospital three days afterwards, there being no trace of the disease, and he was nearly well. He informed me that he lost some blood on going to his home, but since that period he had kept quiet, and had suffered very little.

I do not wish, by referring to this case, to recommend that a patient should be allowed to walk after this operation, because, undoubtedly, bleeding and other inconvenient results might occur if the patient were not very careful; but it is related to show how little formidable the proceeding is, considering its certain and excellent results.

As regards the permanency of the cure a word may be said, and this is to the effect that the good results must of necessity be as lasting as those produced by the ligature, because in each instance the disease is boldly removed—in the one case speedily; in the other, slowly. Of course great care must be taken that no portion of prolapsed membrane or hæmorrhoidal tumour be left, otherwise the relief will only be temporary, and in course of time the patient will again be troubled, and discredit will be

thrown on the treatment. This objection is, however, equally valid in the case of the ligature. I have several times had to operate again on patients where the ligature had been used. Only a short time ago I used the clamp in a case where a surgeon of great repute had employed the ligature with relief for a time only; for when the patient consulted me, I found there were two large internal tumours, and a great deal of diseased and thickened skin around the anus. I operated upon this gentleman with the clamp, using nitric acid as the caustic, and cut away the thickened integument. Although this operation was a severe one, and there was more hemorrhage than usual, he was able to travel to his home— a long distance in the country—on the sixth day.

The details of the operation are very important, and, I must confess, tedious. It is necessary to get the tumour to be removed well down, and so isolated from the surrounding parts that the clamp can be thoroughly applied to its base. Again, it is very needful to see that every portion of mucous membrane is thoroughly secured before the part be cut away, as it may happen that some considerable vessel is involved in that part which is not clamped. In the only case which has given me any uneasiness, I endeavoured to secure two tumours with one clamp, the consequence being a considerable hemorrhage two hours after the operation. A small portion of the mucous membrane escaped from the clamp after it had been divided, and I learned a lesson I shall not speedily forget.

When I first began to use this treatment, I employed nitric acid as the cauterizing agent in all cases; but in two instances it failed to stop the bleeding, and I was compelled to secure the part with a ligature. Consequently, I now only use the nitric acid in the slighter cases; but if the diseased mass be extensive, or the parts extraordinarily vascular, I employ the actual cautery, which suffices to seal up the vessels. I am inclined to think that, of the two, the cautery is followed by more suffering than when nitric acid is used. In Dr. Wiblin's patient, where a most extensive application of the hot iron was needful, the pain was great for some hours afterwards; and in a lady on whom I operated the other day, at the request of Dr. Hawksley, and where also a very extensive application of the cautery was necessary from the number and vascularity of the tumours, the suffering was very great for some hours; but the application of pounded ice to the parts gives immense relief.

I may mention, that I have made a further modification of the instrument at the suggestion of my friend, Dr. Vine, who has assisted me in several private cases, which consists in the blades of the clamp being so constructed that their inferior surface, instead of being convex, are slightly concave. This form allows

an easier application of the instrument in many cases, and I find that a larger portion of the diseased tissue can be secured. It is well, of course, to be provided with a clamp of each kind; but as these instruments are somewhat expensive, I would suggest that in case the surgeon should wish to possess only one, he should have the blades made concave.—*Lancet, Oct.* 31, 1863, *p.* 506.

ORGANS OF URINE AND GENERATION.

39.—DESCRIPTION OF A NEW INSTRUMENT FOR THE RELIEF OF RETENTION OF URINE IN CASES OF TIGHT STRICTURE OF THE URETHRA.

By Dr. Patrick Heron Watson, Surgeon to the Edinburgh Royal Infirmary and Eye Infirmary.

To any one conversant with the success which has in recent times attended the efforts of surgeons to relieve retention, in cases of stricture, by the employment of the common silver catheter, a proposal to increase the armamentarium of surgery by the addition to it of a new instrument, may appear very uncalled for. No doubt, the silver catheter, varying in scale from the size of a fine knitting-wire upwards, is well suited in most cases to enable the practitioner to overcome the difficulties so far as the diminished capacity of the urethra at the seat of stricture is concerned; and when contrasted with the gum catheter affords a facility of manipulation to which the latter instrument cannot pretend. Rigidity of material is thus obviously a matter of moment, conferring as it does a command over the extremity of the instrument; so that delicacy of manipulation, combined with the requisite amount of power, is certainly attained. This rigidity in the case of the silver instrument is, however, only comparative, and becomes less and less as the size diminishes, till at length in the smallest catheter, No. ½ or No. 1 of the Edinburgh scale, the condition of flexibility is almost attained. Nos. 2, 3, and 4 are certainly less pliant, but still they are less easily introduced than the more rigid bougies of the same size which are made of solid German-silver or steel. This fact has long been recognised, and has led generally to the use of bougies of those sizes in preference to catheters in the treatment of stricture by dilatation. While the advantage to be obtained by the use of a very small instrument, which possesses as great an amount of rigidity as possible, has led, in this hospital, for many years, to the employment of a probe-pointed German-silver bougie, made in its stem of the size of No. 3, but tapering at its point to an ex-

tremity not larger than that of a common probe. Such an instrument is certainly more easily introduced into the bladder where a tight stricture exists than even a No. 1 bougie of uniform size, the tapering point enabling the instrument to be guided through the constricted portion with precision; and thus to permit the thicker part of the stem with the greatest facility to follow upon the slender extremity. When introduced it dilates the stricture, so that a No. 2 or 3 will easily pass without experiencing any obstruction. I have therefore on many occasions found it preferable, when foiled in the first attempt to pass the small-sized catheter in cases of retention with stricture, to resort to the passage of the probe-pointed bougie as a preliminary measure, following it up with a No 2 or 3 catheter, and thus securing the relief of the patient with less delay and with much less risk of injury to the mucous membrane of the urethra than by oft-repeated efforts with a small catheter. In such cases, too, especially when there has been much thickening in the perinæum, to secure a still greater degree of rigidity, I have found that Mr. Syme's stricture-staff, of the smallest size, was better suited to dilate the canal, as a preliminary to the introduction of the catheter, than the probe-pointed German-silver bougie. In a case of tight stricture with retention, I have very frequently, however, felt, after having introduced this probe-pointed bougie with no little difficulty, that, were it only hollow, and capable of acting as a catheter, a great deal of trouble to the practitioner and pain to the patient might be avoided.

I accordingly requested Mr. Young, the ingenious surgical-instrument maker of this city, to construct for me a probe-pointed stricture catheter of highly tempered steel, and of exactly the same dimensions as the German-silver stricture bougie in common use. This he did most successfully. The whole length of the instrument is $10\frac{1}{2}$ inches. The stem is hollow from the handle up to *a* (about an inch and a half from the point) where there is an orifice; a silver wire occupies the interior of the instrument, and occludes the eye at *a*, so as to prevent blood or mucus obstructing the channel during its introduction.

I have now used this instrument for more than a year, restricting its employment to those cases where either others or myself had previously been foiled in the introduction of a small-sized catheter, and where formerly I should have resorted to the use of the probe-pointed bougie as a pioneer to the common catheter. In every such instance I have found that the steel probe-pointed catheter was introduced with facility, and afforded the requisite relief completely,—though, of course, slowly, from the small size of the channel through which the

water flowed. This instrument, I may mention, has also been employed by several friends, and in their experience has been found signally serviceable. There is but one objection to the instrument; that is the liability of steel instruments to rust; and more particularly this might be expected to hold good with respect to the channel of a steel catheter. I can only say in reply, that during the period I have employed the instrument, I have had no reason to complain of it on this score. The only precaution I have thought it necessary to employ has been to wash it after use, and then to pass the silver wire dipped in oil along the channel. Should, however, the risk of rust appear to be a serious objection to its general usefulness,—as it might in a warm climate,—then the instrument may be electro-gilt, so as thoroughly to protect the steel surface.

In introducing the catheter to relieve retention, from the position of the eye of the instrument, the operator must take care that this aperture, and not merely the point of the catheter, is lodged in the bladder; else the water will come away in a very tiny and unsatisfactory stream. By passing the finger up the rectum the position of the point of the instrument can easily be determined, and when it is once in the bladder the catheter may then with perfect safety be pushed onwards, stretching the stricture by its gradually-increasing calibre till at least an inch and a half more of the stem has passed within the canal of the urethra. If the silver wire is now withdrawn, the urine will escape in a continuous free stream; and if the patient is then placed in the erect posture or sitting upon the edge of the bed, the bladder will gradually empty itself without the assistance of any pressure over the pubes.

The advantages to be obtained from the employment of this steel probe-pointed catheter are,—

1*st*, That in it we have an instrument, which being made of steel, is thoroughly rigid, and therefore under the control of the operator;

2*nd*, An instrument which, to relieve retention, possesses all the excellence of the smallest catheter, with, from its probe-pointed extremity, all the facility of introduction presented by the probe-pointed bougie.—*Edinburgh Medical Journal, July*, 1863, *p.* 56.

40.—ON CATHETERISM IN CASES OF HYPERTROPHY OF THE PROSTATE.

By Henry Thompson, Esq.

The chief object we must have in view, in cases of enlarged prostate, is to relieve the distension of the bladder. For this purpose in these cases a special catheter is required; the

ordinary prostatic catheter should be no less than a No. 9 or No. 10, 12, or 14 inches long from the rings to the tip, and the curved portion should comprise a fourth or a third of a circle, of which the diameter is from $4\frac{1}{2}$ to $5\frac{1}{2}$ inches. There are other modifications of the prostatic catheter ably explained by Mr. Thompson, of which, however, we cannot here give an account. The prostatic catheter may be of metal (silver) or gum-elastic; if the latter, it should be kept on a stilet more abruptly curved than when required for use, so that it may retain a sufficient curve when employed. The silver catheter is, as a rule, the best, and enables the operator to ascertain the condition of the parts with considerable accuracy; the elastic possesses this advantage, that when introduced with the stilet its curve may be increased by a partial withdrawal of the wire, so as to enable the tip to mount over a swelling at the neck of the bladder. The curve also may be modified by the form of the stilet, so as to suit any individual case; and it frequently enters the bladder when introduced without a stilet after the metal instrument has been tried unsuccessfully. Notwithstanding all this, however, the silver catheter is preferable as being more manageable; but the operator should be provided with both in case of emergencies. In introducing the catheter in these cases, the operator will accomplish his purpose by keeping the tip well in apposition with the roof of the urethra, hooking it round the pubic arch, and then gradually depressing the handle in its further progress between the patient's thighs, so as to carry the tip well over a prominence at the neck of the bladder; if the tip is allowed to pass along the floor of the urethra, it becomes entangled in the prostatic swelling at the neck of the bladder. Occasionally it is found necessary to incline the tip on its arrival at the obstruction either to the right or left, so that it may pass into the bladder, not over the eminence at its neck, but by the depression generally found at the side of the median tumour. If unfortunately false passages have been made by previous operations, the finger in the rectum can ascertain on passing the catheter by the urethra, from the small amount of tissue intervening between the two, whether the instrument has entered such a passage; if so, the catheter is to be withdrawn so as to disentangle it, and the tip elevated by the finger from the rectum, to enable it to avoid the entrance of the passage as it progresses. If this does not answer, the tip, being again withdrawn, should be kept to the right or left in the succeeding introduction, and by one side or the other it will doubtless escape entanglement. The necessity for puncture of the bladder rarely arises, and the subject is too well known to require examination here.

It frequently happens that a very large quantity of urine is found in the bladder in these cases, and serious consequences,

even sudden daath, have followed the abrupt evacuation of the whole. In the first instance, then, it is advisable to draw off not more than 30 or perhaps 40 ounces, and in half an hour or so another portion, so that the bladder may gradually adapt itself to the new conditions. Subsequently the catheter must be used once, twice, or oftener in the day, as circumstances may require. It is not desirable, as a rule, to retain the instrument in the bladder, but it is advisable to do so when considerable difficulty has occurred in introducing it, and its application may be required again in a short time. If it be decided to retain it, care must be taken that the tip merely reaches, and does not project into the bladder.—*Glasgow Medical Journal, April*, 1863, *p.* 93.

41.—SUPERIORITY OF VULCANIZED CAOUTCHOUC OVER ANY OTHER SUBSTANCE FOR THE FABRICATION OF BOUGIES.

Professor Nelaton has recently shown the superiority of vulcanized india-rubber for catheters and bougies over the instruments in common use made of tissue coated with oil mixed with litharge. The latter are rigid, liable to give rise to false passages, cause pain, and when permanently left in the urethra, exercise a degree of pressure which may induce mortification and perforation. In a few days, moreover, they are deteriorated by humidity. Vulcanized india-rubber sounds, on the contrary, are perfectly flexible and unchangeable. They are inserted with greater ease, and cause so little distress, that they may be preserved in the urethra during a journey without inconvenience. They are not affected by moisture, and one of these instruments which remained in the urethra twelve days, in one of M. Nélaton's cases, when withdrawn presented no sign of outward injury, and was as smooth as before its introduction.—*Jour. de Méd. et Chir.—Dub. Med. Press, June* 24, 1863, *p*, 627.

42.—EXTRACTION OF A BOUGIE, TWELVE INCHES LONG, FROM THE BLADDER.

By William Fergusson, Esq., F.R.S., Professor of Surgery in King's College.

[There was a very ingenious instrument exhibited at the last Exhibition, by Charrière, of Paris, constructed for the purpose of withdrawing such an object as a bougie from the bladder. The main feature of this instrument was, that having clutched the bougie it could lay it parallel with itself, so that both might be withdrawn simultaneously.

Since gutta-percha has come into use there are many more

accidents from bougies breaking than formerly, as it is a material treacherous in the extreme.]

In my experience I have not met with any case so remarkable as the following:—S. H., Esq., aged nineteen, had been in the habit of passing a bougie for himself. On the evening of the 12th March, 1863, he allowed this instrument, which was without a head, to slip wholly into the urethra. His attempts to get it out seemed only to push it further towards the bladder; and instead of seeking assistance, he, in despair, went off to bed, where he slept soundly all night. Next day he drove six miles in a gig, and then had a strong desire to pass water. Having done so, he was called again in half an hour; and from that time until the 18th of May his sufferings were extreme. His nights were much disturbed, and during the day the call to make water came about every ten minutes. The urine was high-coloured and loaded with mucus. The straining was so severe that his eyes became bloodshot; and from being a stout able-bodied young man, he had become much exhausted and considerably emaciated. I have rarely seen anyone in greater suffering from stone in the bladder.

My assistance being asked in this case, I felt doubt and hesitation on various points. The patient gave a confused account as to the size of the instrument, and whether it was a bougie or a catheter. All that he was sure of was that it was not metallic, but flexible; that it was not of great thickness, and that the whole instrument had passed in. Looking to the circumstance that when I was consulted the instrument had been in the bladder for two months, I imagined that it must now be so coated with stone, that it would be too thick to be extracted by the urethra, particularly if it were to be withdrawn double. I therefore could not say positively whether the patient could be relieved by extraction in this way, or by the serious process of cutting into the neck of the bladder. I considered it expedient to inform my young patient and his friends on these points; and having ample permission to do as I might think best, I resolved to make, at all events, a trial to extract the instrument through the urethra, and so avoid the dangerous alternative. The process of sounding had convinced me that already the instrument had become incrusted, and I felt assured that it was bent in various directions; for whenever the sound was passed, its point came into contact with the foreign body. My impression was that possibly I might seize the object about its middle; that it might double, and not prove too large for extraction; and as for the calcareous matter, I was in hopes that from its recent deposition it might not be so thick as to cause obstruction, or that it might drop from the object as it was passing outwards from the neck of the bladder.

On the 18th of May, 1863, chloroform having been administered, and all prepared for lithotomy, I introduced a small lithotrite scoop, about the size of No. 4 bougie, and speedily seized the object between its blades. On drawing both through the neck of the bladder, I felt obstruction, but not sufficient to induce me to desist. Having reached the opening in the triangular ligament, the instrument slipped; and finding some difficulty in again fixing the blades, I tried several others, such as are in use for the extraction of small stones from the urethra, but with no better success. I again used the first instrument, and fortunately soon got a firm hold. With gentle traction I gradually withdrew the instrument and what it held, and succeeded in drawing out an entire bougie, exactly twelve inches in length, and about No. 6 diameter. To my astonishment, I found that I had caught the bougie by one end, and, in consequence. had met with less obstruction from the narrowness of the passage than if I had seized it about the middle, and brought it out double. Indeed, looking to the size of the bougie, and the manner in which it was incrusted, I think it probable that it might have been impossible to withdraw it through a urethra of the size of that with which I was dealing. A few drops of blood followed the attempts to seize the bougie as its end rested in the urethra. The object came out in a straight line; but it immediately, when the strain ceased after its emergence from the orifice in the glans, became coiled or bent.

This was doubtless the shape of the bougie as it lay in the bladder, the spaces being wider or narrower in accordance with the quantity of the fluid present. The incrustation was sufficient to give a certain amount of rigidity to the bougie, but happily not enough to prevent it stretching to a straight line as it was withdrawn. Inquiries were afterwards made about the bone or ivory head usually fitted to such instruments, when the patient stated that there had not been one. By good chance this bougie, instead of being solid, as commonly made, was hollow like a catheter, and hence was more compressible.

Thus the ordeal of lithotomy was set aside. The frequent desire to pass urine ceased forthwith, that fluid speedily became clear and healthy, and in ten days the patient was able to move about as actively as ever, and to retain his urine as in perfect health.

In the course of my practice I have not met with a case similar to this in all respects. As regards extraction it may be deemed as difficult and dangerous to deal with a portion of one inch or three inches in length as with an entire bougie; but the rarity of the one case is greater than that of the other, and the extent of twelve inches of incrustation was more likely to be a positive obstruction than a less amount. Then, beyond a doubt,

the length of the bougie, even when coiled in the bladder, was productive of far greater suffering to the patient; for, whatever the quantity of water present, the bladder would always lie in contact with the instrument at various points. I have never, except in this instance, seen the eyes bloodshot from straining in consequence of the presence of a foreign body in the bladder. I have known instances where portions of bougies have remained in the bladder for months and years without producing much irritation; and in one the distress, months after the breaking of a bougie in the viscus, was so trivial that the patient was recommended to take a trip to Madeira for the improvement of his general health and for the relief of the slight local annoyance of which he complained.

The good fortune which enabled me to seize the end of the bougie between the blades of the extracting instrument was certainly great. I need scarcely state that I consider this was mere chance. Possibly being the last part that entered the bladder it was nearest the neck, and hence was the part first touched; but I confess I had no idea of such luck, and my impression is that such a chance would be exceedingly rare were cases of this kind more common than they are.

There is one feature of a positive character, however, in the operation above described, which is, indeed, the chief reason that I venture to give publicity to the case—that is, in reference to the instrument wherewith the extraction was effected. It is a lithotrite of a size so small that as yet the profession cannot be said to be familiar with it. For years back I have been using much smaller instruments than those generally made for the extraction of small stones and fragments from the bladder and urethra; and latterly Mr. Matthews, of Portugal-street, has produced these instruments in great perfection and wonderful strength of the sizes of No. 4 bougie and upwards, the blades being so slender that they can hold between them an object of considerable size, and yet the calibre of both may not be so great as not to pass readily along the urethra. I have found such instruments of great value in dealing with fragments of stone in the bladder; and in such a case as that above related I know of no instrument which could have done such service, for its grasp is stronger than any other that I know of, and for that reason it would hold more firmly, and be less likely to slip. In this instance the instrument did actually slip on the first clutch; but that was possibly because the blades had been but slightly fixed by a short grip. Afterwards several others slipped, and it was on a reapplication of the same instrument that I caught the end of the offending object and held it so firmly that the extraction was most satisfactorily accomplished.—*Lancet, Aug.* 22, 1863, *p.* 215.

43.—OPERATION FOR THE CURE OF VARICOCELE BY WIRE LIGATURE.

Case under the care of BARNARD HOLT, Esq., Westminster Hospital.

[The patient was twenty-four years of age and had suffered from varicocele for twelve years, and during the whole of this period he has suffered from pain in the testicle, which latterly so much increased as to compel him to abandon his work.]

Upon examination, the usual tortuous and congested condition of the veins was detected behind the testicle, which, however, could be emptied by placing him in the horizontal position; but when pressure was applied over the external abdominal ring, and the patient was desired to resume the perpendicular, the veins were more swollen than before. The vas deferens could be easily isolated.

Mr. Holt determined to tie the veins with the wire suture by the subcutaneous method; and the patient being placed under the influence of chloroform, and the vas deferens isolated, a needle, armed with the wire ligature, was passed through the scrotum behind the diseased veins, and made to perforate the scrotum on the inner side. The needle was now made to enter at the same opening, and the wire was passed in front of the veins, and so out at the first puncture; thus no skin was included in the wire loop, but merely the veins and some areolar tissue. The wire was now twisted, and the same proceeding adopted a little lower down, by which the veins were thoroughly included in two ligatures. The wires were now shortened, the intention being to subject the veins to compression for three or four days, and then to remove them by simply untwisting them. For the next three days the patient was comfortable, and did not complain of pain. There was slight swelling, and tenderness when the part was touched, but no other pain. On the fourth day Mr. Holt intended untwisting the wires as before described; but the twisted portion was so deeply imbedded that he determined to cut both ends short and leave them as permanent compressors. The punctures healed in two days, and the wires remained, not exciting any irritation or disturbance, and the patient was able to work without inconvenience. He was detained in the hospital for a fortnight that Mr. Holt might see whether any inconvenience was experienced; but none having occurred at the expiration of that time, he was discharged, but requested to present himself from time to time that the result might be watched. The veins between the ligatures were entirely obliterated, and the patient described himself as perfectly free from any pain in the testicle. He has presented himself occasionally as requested. The wires can be

elt, but they do not occasion any inconvenience, and he has resumed his work with a perfect immunity from pain.

Mr. Holt remarked that this was a case from which probably ome instruction might be derived. He stated it was not his ntention, in the first instance, to have left the wires around the eins; but as there was some little difficulty in their removal, e determined to retain them, as in all probability they would ot excite irritation, and they would positively prevent any ecurrence of the disease. He considered it was a practice that ight be repeated with advantage. The pain of the operation as merely that which resulted from the two punctures in the kin, and the patient had not otherwise suffered, as was almost lways the case when any portion of the integument was sub-ected to pressure. The operation was in itself of the easiest ossible kind to perform, and he did not consider the patient eed be confined to bed. Should future cases be attended with like favourable issue, the proceeding would become general, d the pain and time of the patients be considerably abridged, hile the question of recurrence would be entirely set at rest, ch an occurrence being impossible so long as the wires acted compressors.—*Lancet, August* 15, 1863, *p.* 190.

44.—THE RADICAL CURE OF VARICOCELE.

By Dr. John H. Packard, Demonstrator of Anatomy in the University of Pennsylvania.

Enlargement of the spermatic veins, if it exists to a marked egree, is an extremely annoying and troublesome affection. is less amenable to palliative treatment than distension of e veins of the limbs, for obvious reasons, while there is t so much risk attending operations for its radical cure. I ve not yet seen any statement in regard to the employment of tallic threads for this purpose, but am inclined to think that will still further diminish the danger of such procedures. e plan which I would lay before the profession is merely a dification of that proposed by Ricord, or rather a simplifica-n of the apparatus described by him. My experience with it a number of cases has been so successful as to induce me to er it for the consideration of other surgeons.

The apparatus employed by me consists of a needle, a fine mealed iron wire, and a piece of sheet-lead. The needle rather slender, two and a half inches in length, slightly rved near the point; its eye is near the point, and it is her set in a handle or headed so as to be firmly grasped with pair of forceps. The lead plate is about an inch and a arter in length, by half an inch in width; it has a hole bored ough it near each end.

Having isolated the swollen veins in the usual way, I pass the needle, armed with the wire, behind them, and slip it back along one end of the wire, leaving the loop. Cutting off the long end of the wire, I now arm the needle again, and pass it in the opposite direction, in front of the mass of veins, through the same openings in the skin ; it is then withdrawn as before, again leaving the loop. Each pair of ends is now passed through the other loop, when the mass of veins will be enclosed between the two double wires. Now, taking the lead plate, I pass the ends through the holes in it, draw them rather tight, and gradually twist them all together over the middle of the plate.

By twisting the collected ends of the wires once or twice every half minute or so, there may be gradually effected a most forcible constriction of the diseased vessels; the twisting may be suspended when the pain caused becomes severe, or when the operator feels satisfied that the tissues must be cut by the wire if the pressure be further increased. Half-a-dozen additional turns, or more, may be daily made until the loops of wire have come together, which will be known by their looseness in the sinus formed by their passage. Now, by simply dividing them near one opening they may be drawn out by pulling on the longer end. So slight is the pain caused by this operation that I have not yet found it necessary to resort to anæsthesia for its performance. But the point I particularly wish to draw attention to is the cheapness, efficiency, and simplicity of the apparatus as compared with that of Ricord. The security given by the twisting of the ends of wire, and the power it affords of gradually tightening the loop in any case, seem to me to be among the great advantages of metallic over other sutures. —*American Medical Times.—Dublin Medical Press, May* 20, 1863, *p.* 506.

45.—ON THE USE OF TINCTURE OF IODINE IN URETHRITIS.

By M. Oscar Max.

Since the publication of M. Boinet's researches, tincture of iodine has been employed with much benefit in acute and chronic vaginitis, whether simple or virulent. This remedy is even preferred in Belgium to nitrate of silver, as milder in its action, and also more promptly efficacious. The physicians of Hospital Saint Pierre have, however, substituted in women, for the injections recommended by M. Boinet, another mode of treatment, which M. Oscar Max describes as follows in the Presse Médicale Belge :—

A small piece of cotton wool is attached to a style sufficiently slender to be admitted into the urethra, and replaces with advantage the syringe commonly used for injections. The instrument is steeped in tincture of iodine, and inserted more or less far into the duct, according to the supposed seat of the inflammation, and may even, if necessary, be introduced down to the neck of the bladder. This procedure is equally efficacious in single and in chronic urethritis.

Encouraged by the success of the method in women, and anxious to preserve also male subjects from the sufferings consequent on injections and cauterizations with nitrate of silver, M. Max resorts in men to the same system, for the purpose of curing and suddenly checking the progress of acute inflammation of the urethra.

"In imitation of the practice adopted at Hospital Saint Pierre," says he, I affix a piece of cotton wool to the extremity of a common probe, impregnate the soft spongy texture with tincture of iodine, and gently insert it with one hand into the urethra, while with the other I keep open the lips of the meatus. The adjacent valvular folds should be carefully avoided, and the remedial agent conveyed to a depth of one inch at least, which is quite sufficient for all practical purposes, as in the incipient stage of urethritis the inflammatory action is generally confined to the fossa navicularis. It may possibly be objected that tincture of iodine being a fluid of invariable composition, the effects of the remedy cannot be increased or diminished at will, as those of the solution of nitrate of silver; that the treatment is the same in every instance, and that its activity cannot be modified according to the degree of severity of the disease. The objection, however, falls to the ground, when it is remembered that, according to the number of successive applications of the tincture to the surface of the skin, rubefaction, irritation, or vesication, may at will be induced, and that the surgeon is thus enabled to cause, according to circumstances, mild or powerful counter-irritation. The same remark applies to mucous membranes, with this difference —that these textures being more irritable than the skin, the same effects will follow a more superficial contact with the remedy.

Thus, M. Max inserts the probe but once in mild cases, and two, three, or even four times in more aggravated forms of urethritis. Deep or superficial modification of the condition of the diseased surface is produced, and the energy of the local medication is proportionate to the severity of the symptoms, which he conceives cannot be effected with the same accuracy when the solid lunar caustic is used. M. Max is in possession of numerous cases, which bear witness to the efficacy of tincture

of iodine as a substitute for nitrate of silver. Uncomplicated urethritis, acute or chronic, but occupying the fossa navicularis, has been cured by two or three applications of tincture of iodine. A fourth recourse to the remedy has seldom been required. Simple urethritis has been suddenly checked by one, and less frequently by two, applications, but chronic urethritis usually proves more obstinate. M. Max remarks that he has resorted to the method in uncomplicated cases only. When chancre is present in the duct, or when the affection assumes the granular form, it would be imprudent to rely on the virtues of the tincture.—*Jour. de Méd. et Chir..—Dublin Medical Press, May* 20, 1863, *p.* 519.

46.—THE ENDOSCOPE, AND ITS APPLICATION TO THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE URINARY PASSAGES.

Report on M. Desormèaux's Ward, Hospital Neckar, Paris.

[The endoscope is not an instrument which has hitherto attracted much notice. It is, as its name implies, for the inspection of cavities inaccessible to the eye. The present article is confined to its application in cases of disease of the urethra and bladder.]

Surgeons have, for some time, turned their attention to the construction of optical appliances and reflectors, calculated to illuminate deep-seated organs, which otherwise baffle all attempts to direct investigation. The ophthalmoscope and laryngoscope, for instance, have, within the last few years, given rise to active inquiry, and are daily assuming greater importance in practice. Not so the endoscope which was exhibited by the author, at the Academy of Medicine, in 1853, under the name of *Urethroscope.* After gaining for the ingenious and learned inventor a portion of the Argenteuil prize, the instrument fell into such entire oblivion, that we have seen no one but M. Desormeaux himself use it in the hospitals, an undeserved neglect, which is much to be lamented. The endoscope is undoubtedly a useful invention, and we entertain so favourable an opinion of its utility that we cannot refrain from entering into a few descriptive particulars of the apparatus, viewed with respect to the inspection of the bladder and urethra.

It is needless to expatiate on the details of the construction, or on the manner of using the instrument, which is extremely simple.

The illuminating apparatus consists of a copper box provided with a chimney, and containing a petroleum lamp; a phial similar to that used for the common spirit lamp is all that is necessary, the flame heats moderately the different parts of the

instrument, and affords sufficient light for all practical purposes. The light is conveyed by a series of reflectors and lenses, into a lateral metallic tube, which is continuous with the catheter. At one of the extremities of this tube, and turned inwards, is placed a mirror perforated at its centre, where the eye of the observer is applied. The other extremity fits into the catheter introduced into the urethra.

The catheter is a straight silver tube, open at both ends, and wide at the extremity, adjusted to the illuminating apparatus, where it is slit in an extent of an inch and a half, for the introduction of metallic rods, bearing cotton, a minute blade, or a style, for the cleansing, incision, or exploration of the duct. These instruments are supplied with a flat handle, bent at right angles on the rod, which, while the shaft is in the catheter, the operator holds in his hand. The apparatus is used as follows:—The lamp is lighted and placed in its receptacle; the catheter provided at its distal extremity for the protection of the mucous membrane, with a rounded wooden bulb, supported by a conductor, is introduced into the urethra, when the mandril is withdrawn. The wide extremity of the catheter is then affixed to the illuminating apparatus, and the eye is applied to the aperture above designated. In a case of a stricture, for instance, the catheter is gently inserted as far as the obstruction, and the diseased spot being possibly more or less concealed by blood or mucus, a rod, provided with a piece of cotton-wool, is introduced through the lateral slit in the instrument, and the parts are carefully cleansed; inspection is then proceeded with, and as we have frequently ascertained from personal experience, the aspect, form, and colour of the affected region can be clearly discerned. With a style, the direction of the passage and the degree of consistency of the stricture are then examined, and if incision be deemed necessary, blades of various shapes, borne on metallic rods, are at hand, with which the required divisions may be at once performed in any given direction. The condition of the mucous membrane in front of the stricture can also be ascertained in the most satisfactory manner, by slowly and simultaneously withdrawing the instrument from the urethra, the eye remaining applied to the orifice at the extremity of the tube.

Having so far described the facilities thus afforded for the examination of the urethra, we may now touch on the practical advantages derivable from the use of the apparatus. In the first place, the urethra may be, with its assistance, inspected in the most minute manner from the meatus to the bladder, and any alteration of the mucous membrane readily detected.

In stricture especially, we have often witnessed the utility of

the instrument. To say nothing of dilatation as a method of treatment, the incision of the constriction is greatly facilitated. The operator sees the parts it is his intention to divide, can follow the progress of the blade through the tissues, and watch every step of the procedure as if it were performed on the surface of the body; the exact extent of the incision may thus be perfectly regulated according to circumstances, and the surgeon experiences no dread of failure, or of untoward consequences. It is not our intention to enumerate the manifold diseases of the urethra, and to point out the peculiar advantages of the endoscope in each, but merely to state that it affords the most valuable assistance to diagnosis, and that it is as convenient for the application of the caustic-holder as for the introduction of sharp instruments. Many ingenious mechanical contrivances have been invented for the purpose, but none is so perfectly appropriate as M. Desormeaux's apparatus. He merely impregnates a piece of cotton-wool attached to a silver rod, with the caustic, and applies it to the seat of disease; cauterisation is thus effected with the utmost ease, and may be limited to as small a space as the operator may desire, circumstances which must greatly enhance the utility of this method of treatment of strictures.

We should not omit to allude to the modification introduced in the arrangements of the apparatus, for the inspection of the mucous lining of the bladder. For this purpose, M. Desormeaux employs, instead of a straight catheter, a tube incurvated to the same degree as M. Mercier's instrument, and unprovided with any aperture at its point. The smaller branch of the curve forms with the shaft an obtuse angle, at the summit of which is accurately fitted a piece of very transparent glass. This instrument is introduced into the bladder almost as easily as the common catheter, and when it has been adapted to the illuminating apparatus, the observer can view with facility the posterior and inferior segment of the mucous membrane, the region of the highest interest to the surgeon. The importance of such an inspection is obvious; it is needless to add that the bladder should previously be distended with an injection of clear water.

M. Desormeaux likewise resorts to the endoscope for the examination of the nares, pharynx, and rectum, and it is adapted for the inspection of all the cavities of the body, usually inaccessible to the eye. We confine our remarks on the present occasion to the explorations witnessed by ourselves in that surgeon's wards, and in conclusion invite the attention of our readers to a mechanical contrivance calculated to be of essential service in the diagnosis and treatment of the diseases of the urinary passages.—*Jour. de Med. et Chir.—Dublin Med. Press, April* 22, 1863, *p.* 402.

47.—ON THE TREATMENT OF ONANISM.

By John Hilton, Esq., F.R.S., Surgeon to Guy's Hospital.

Regarding onanism and its treatment surgeons are often consulted, and it is a very important matter. It is a habit very difficult to contend with in practice. I know of no way to prevent onanism except by freely blistering the penis, in order, to make it raw and so sore that it cannot be touched without pain. This plan is sure to cure onanism. I have adopted this plan of treatment during more than twenty years. Gentlemen have come to me and said, "I have for many years suffered from this abominable, disgusting habit, and I have tried to cure myself of it, but I cannot; for my morbid inclination overcomes my disgust when awake, and I think when asleep I am sometimes pursuing it. Can you offer any suggestion?" I have said, "Paint this strong solution of iodine over the whole of the skin of the penis every night; and if that does not make the organ too sore for you to touch it, then apply in the same way a strong blistering fluid to the penis." The result of my experience in practice has been that in almost every instance the continuance of the habit has been thus entirely prevented.

Here is a case in relation to this subject. The notes are from the patient's surgeon.

"W. B., aged fifteen, is one of eight children, all of delicate constitution, and himself prone to convulsions in his infancy. After repeated exposure to cold and wet, he called upon his surgeon, Sept. 4th, 1860, complaining of pain in the sacrum and left hip and thigh. He was relieved by purgatives and salines. I saw him on Sept. 11th, with both knees flexed, and complaining of great pain in the lower part of the sacrum, with so much tenderness as to be unable to sit down. The left thigh and leg were very tender, and there was excessive tenderness of the surface all down the spine. No local indications of heat in any of these parts; bowels constipated; tongue coated. He was ordered cathartic pills, colchicum, and an aperient mixture, in strong doses; croton oil and tartar emetic liniment to be rubbed along the dorsal and lumbar portion of the spine. Within a week there was great pain along the cervical portion of the spine, extending to the left arm. Says the motion of the shoulder is very painful; elbow free; left hand closed tightly, and any touch either of the fingers or wrist caused him great pain. Slight pressure anywhere on the spine produced great pain, according to his own statement.

"Sept. 19th. Left hand firmly closed; both thighs drawn up; knees bent, and cannot be extended; toes of left foot inverted,

and whole limb very sensitive. The mouth is closed for a few minutes two or three times a day.

"This went on till Oct. 3rd, when a physician from London saw him. This gentleman, in consultation, thought that he recognised an important pathological state of the brain or spinal marrow, and pointed out with great precision the pathological anatomy which was sure to be found at the expected post-mortem examination. This prospect made the friends of the patient very anxious indeed.

"On October 7th he was no better; head symptoms were now added, and for a minute or two he became unconscious.

"11th. No better; valerianate of zinc, with compound rhubarb pills, quinine, &c., were continued.

"19th. Consulted with the physician again; fits and trismus worse. He was ordered to have bichloride of mercury, iodide of potassium and bark."

30th. As the patient was getting worse I was requested to see him. I found him sitting in his chair, the left forearm flexed, with the left thumb turned inwards towards the palm of the hand, and the fingers flexed over it; his face flushing very readily. The skin was cool, and there was no thirst, The pulse was not quick, but the heart was very excitable; the tongue clean; the pupils dilated; skin exquisitely sensitive to the touch when attention was directed to that point, but not when the mind was diverted from it. The contraction of the limb and hand was constant, but could be overcome by persevering efforts on my part, giving way very suddenly. The spine was tender the whole of the way down. I requested that he might be denuded. The penis was very sensitive, and the skin prolonged; the genital organs were cold, but highly sensitive; the hands were cold and damp. He had insisted on sleeping by himself, and in a room to himself. The patient watched especially my examination of the genitals, and when I at that moment looked at him seriously, averted his face as if ashamed. I felt convinced that the whole of the symptoms were the result of onanism.

On October 30th I insisted upon his not sleeping alone, so that he might not be able to continue his habit unobserved, and ordered five grains of mercurial ointment to be rubbed once a day into the axilla, so as to divert his mind from the thing I had in view, and I desired that a blistering fluid might be applied to the penis every night. In about three or four days the hands relaxed and opened, the legs remaining contracted; this contraction continued during sleep. The trismus persisted, but with longer periods of muscular relaxation. The local genital irritation was kept up, small doses of morphia were

given at night, and the ointment used till the 20th of November. The mouth was a little sore, having been made so by the mercury. The ointment was then omitted, but the application to the penis was maintained.

Nov. 23rd. This is the surgeon's report: The "fits," &c., continued till to-day, and to-day the trismus lasted longer than at any former time. He suddenly opened his mouth, regained the use of his legs, and no relapse occurred. Subsequently a mixture of strychnia was given twice a day. I afterwards received this letter respecting the case from his surgeon :—

"My dear Sir,—Young B—— is, and has been quite well; he is now in London. He was cured by the end of last November (one month from my visit). A slight gleet remained for months after; I did nothing for it but cold baths, &c. The application I painted the whole penis well with was the compound tincture of iodine, made stronger by ten or twelve grains of iodine to each ounce. It 'touched him up well' I can tell you; but I don't think the friends ever had any idea what we considered the cause of his illness."

Here is a case, then, which I have placed upon the simple anatomy of the parts—viz., that the same nerves which supply the skin supply the mucous membrane and the muscular apparatus of the penis,—and I have done so for the purpose of displaying its utility in practice. Not long after I had visited this young patient, a gentleman called upon me. When he came into my room he said, "You have performed a miracle, Sir." "A miracle!" I said "you really take me by surprise. What do you mean?" "Why, you have cured young B——; he is quite well, and at school. Dr. —— said he would surely die from fits resulting from some constitutional influences inherited from his father and mother." I assured him that what I had done was no marvel; that I simply acted upon common sense, experience, and physiological deduction. With that assurance and explanation he seemed to be satisfied, and so was I. —*Lancet, August* 1, 1863, *p.* 122.

DISEASES OF THE SKIN.

48.—ON THE INFLUENCE OF THE GOUTY DIATHESIS, AND OF ALCOHOLISM IN THE PRODUCTION OF DISEASES OF THE SKIN.

By Dr. George Ross.

The treatment of cutaneous diseases that are complicated with, or caused by, an attack of gout, must be the same as would prove beneficial for the relief of the constitutional

affection. By tracing a cutaneous malady to its constitutional cause, we simplify both our diagnosis and our curative agents. The chief drugs on which we must rely are liq. potassæ and colchicum. Dr. Burgess in his edition of Cazenave, remarks that he has found great benefit from the use of colchicum in cases of psoriasis, associated with the gouty diathesis. Colchicum has been recommended by other practitioners in some cases of skin disease. The explanation of its value is the co-existence of gout or rheumatism, latent or manifest. Its sedative effects on the skin are due to its peculiar action on the gouty poison.

Liq. Potassæ is an invaluable remedy in all acute cases of skin disease. When there is a gouty complication it should never be omitted; but in other cases also, in which there is no reason to suspect a gouty predisposition, it acts with admirable effect; but it should be given in large doses, sufficiently diluted, and continued, if necessary, until the system begins to feels its debilitating effects. I am in the habit of prescribing for an adult about forty-five minims, to be administered in milk or barley water. Not only is eczema rapidly benefited by it, but the more obstinate forms of psoriasis yield to its persevering employment. After a short time the patient begins to feel weak, he loses flesh, and his face pales; but simultaneously with the effect on the system, the eruption loses its redness, and, if it be psoriasis, the scales fall off in abundance. There is a point at which it is desirable to stop the potash, and to give a tonic—quinine or arsenic, according to circumstances—when the disease will rapidly improve. Liq. potassæ appears to have a powerful influence over the albuminous elements of the blood, and in this way to modify the action of the skin. I must plainly state, however, that it is a debilitating remedy; it must not, therefore, be pushed too far or long. The value of liq. potassæ in correcting errors of digestion, and in producing alkalinity of the urine, is so obvious, that it scarcely requires to be enforced, though the fact serves to explain its benefit in gouty complications, as well as in other cutaneous affections.

Gouty patients are often liable to a persistent disease of the skin, which requires local as well as general treatment. I have no faith, however, in local treatment as curative, only as emollient. This day, a lady, who has long been suffering severely from gout, showed me her arms, shoulders, and chest, which were covered with lichen; many of the papules had been scratched, and exhibited the usual bloody points, an evidence of the uneasiness they had given, and the rough treatment to which they had been subjected. This is, however, a chronic complaint; the lady has been liable to it for many years, and suffers exacerbations when her general health is disturbed.

When lichen, excema, or psoriasis persists after relief of the gout, the general health should be carefully sustained, and such local treatment resorted to as the particular condition of the patient may indicate. In chronic eczema and psoriasis, the internal administration of tincture of cantharides is frequently useful. It stimulates both skin and kidneys, and gives a healthy tone to the diseased parts. Its administration, however, should be carefully watched, so that no unpleasant effects may be produced. In the squamous diseases the warm bath is very beneficial; but I cannot say that I have found cases of lichen in debilitated subjects advantaged by it. On the contrary, I have noticed, in some cases, a fresh crop of papules break out after each warm bath. If itching be troublesome, an alkaline wash, combined with some sedative, as hydrocyanic acid, opium, conium, or belladonna, will give ease. Hardly anything answers better than cold aspersion when heat and irritation are excessive, as in severe cases of eczema. No fixed rule can, however, be laid down in these matters, for some patients will express themselves comforted by an application which others cannot endure. Sometime since a lady consulted me for a pustular eruption on the skin—small boils, in short—and she told me that she had previously seen an eminent snrgeon, who had placed her under the cold water treatment. On removing the oiled silk, the lint steamed with hot vapour; and on lifting the lint, the one boil which the treatment was intended to cure had been multiplied into a dozen;—all the products of a protracted steaming of an irritable skin. She was then put under a genuine cold water treatment by occasional affusion, and all the postules rapidly healed. This case is adverted to to show how easily the skin may be influenced even by so simple an element as water.

Tar Ointment is an admirable local application in psoriasis; it quickly removes the scales and reduces the skin to its natural colour. It sometimes irritates the surface to which it is applied; and induces a pustular eruption; this, however, disappears so soon as it is deemed expedient to discontinue the ointment. I have found this ointment act best after a course of internal medicine, whether potash or arsenic. Alone it cannot be depended on; and the relief it gives is only temporary. The iodide of sulphur ointment is also beneficial in similar cases. As it is not my intention, however, to dilate upon the detailed treatment of these cases apart from their connection with gout, I shall say no more on this topic.

Alcoholism.—The use of alcoholic drinks induces various diseases of the skin. It is well known that different alcohols act upon the system in different modes, and influence particular organs each after its own tendency—gin affecting the liver and

kidneys, brandy stimulating the heart and blood-vessels; rum, the brain and nerve tissue; malt liquors, increasing the deposition of fat; some alcohols augmenting, as Dr. Edward Smith has shown, the expiration of carbonic acid, and others diminishing it. Similar effects are observed on the skin. A gin drinker's skin is usually pallid, dry, harsh and dusky. Two of the worst cases of psoriasis I have ever seen were in the persons of gin drinkers. The disturbance of the digestive functions incidental to spirit drinking, leads to many forms of eruptive disease, most of which are removable by abstention from the usual stimulant.

The most common and noticeable result of alcoholism is *acne rosacea*, a red, swollen tuberculated state of the nose and face. No doubt this state is chiefly induced by protracted stimulation and distension of the capillary vessels—a hyperæmia which leads to inflammation of the sebaceous follicles which pustulate, but do not mature readily or completely. It must be observed that this disease does not appear before the prime of life, when the capillary blood-vessels about the alæ of the nose always enlarge in some degree, and the skin loses its fineness and smoothness. The worst cases of this disease that I have seen have been hereditary; that is to say, there has been a constitutional tendency to vascular engorgement of the nose; and nothing was wanted to develop the disease but an abuse of spirituous drinks. Some men could not get a confirmed acne if they were to drink specially for that purpose.

The proper treatment of these cases is, as the late Mr. Abernethy would say, "to cut off the supplies." Associated with abstinence we should resort to laxatives, and soothing local applications. A great variety of lotions and ointments has been devised for the treatment of these cases; their very number proves their comparative inutility. With proper regimen many will prove useful as emollients or stimulants, according as either may be required; without it, every local resource will fail.

If these cases are watched narrowly, it will be found that the same follicles inflame and re-inflame at successive times. If, therefore, they prove slow in their progress and repeatedly take on the inflammatory action, I have been accustomed both in the present and in other forms of acne, to destroy the follicle by burning it with strong nitric acid. I effect the purpose in this mode:—An incision is first made through the skin over the follicle, and then a small capillary tube previously charged with the acid, is applied. The acid penetrates the follicle, but does not burn any portion of the skin beyond the circumference of the tube. If the inflamed follicle be large, a second incision may be made in it, and a second application of the acid effected.

No noticeable mark is left after this little operation. It causes a certain amount of stinging, and if too many follicles are cauterised at one time, considerable irritation is experienced. It has the effect, however, ultimately of reducing the intensity of the disease. The small vascular points or nævi that not unfrequently spring up on the eyelids, are easily removed by this mode of applying the acid; and in many instances in which I have employed it, not so much blemish has been left that a magnifying glass could detect it.—*Med. Circular, March* 18, 1863, *p.* 144.

49.—EFFICACY OF SESQUICHLORIDE OF IRON FOR THE TREATMENT ULCERS ABOUT THE NAILS.

By Dr. M. Billon, Surgeon, 19th Regt.

Dr. Caillet, of Luynes, (Indre et Loire), having recently published a case in which the application of sesquichloride of iron effected a cure of the affection popularly termed *the growth of the nail into the flesh*, I take this opportunity of recording several instances of the same kind, witnessed by myself, which confirm the results obtained by M. Caillet, and may perhaps be deemed not wholly uninteresting. In 1858, Dr. Wahu, staff-physician to the army, having succeeded with this remedy in curing the painful diseases in question, I resorted to the same method, and with the greatest benefit in four cases. I may here remark that ulcers above the nails are occasionally observed among our soldiers, having escaped the attention of the medical boards, or being caused by the pressure of the boot during forced marches. Under these circumstances a *prompt* and *painless* cure may be effected by inserting the *dry* sesquichloride between the nail and the protruding flesh, and powdering the latter with the same substance. A large bandage should be applied over all, not impregnated with the *liquid* sesquichloride of iron, as recommended by Dr. Caillet, a precaution which may, however, be useful, as the folds of the band dry rapidly, and preserve their situation in a more exact manner.

On the following day, the exuberant flesh is found to have acquired the hardness of wood; suppuration speedily ceases, and a cure follows after two or three applications. This simple and mild treatment is obviously far preferable to the numerous surgical procedures hitherto recommended. In the course of four or five days, in a week at the farthest, the original pain ceases, the swelling subsides, and the patient is able to walk. Naught remains but the hardened protruding flesh, which falls away about a month after the application of the sesquichloride of iron. These are the results yielded by the method in four soldiers suffering from the growth of the nail into the flesh.

They have appeared to be sufficiently remarkable to warrant the communication.—*Jour. Méd. et Chir.—Dub. Med. Press, May* 20, 1863, *p.* 506.

50.—ON THE TREATMENT OF ECZEMA.

By Dr. T. McCall Anderson, Physician to the Dispensary for Skin Diseases, &c., Glasgow.

It appears that no treatment can be more routine and ineffectual than that frequently adopted in this country for the cure of eczema, and cases of this disease are often allowed to go on for months and years, when judiciously selected applications could have removed it in the majority of instances in as many weeks; for there are few diseases more curable than even severe forms of eczema. The means of cure, which we may divide into the constitutional and local, must vary, however, according to the age, existing state of health and constitution of the patient, and the seat, extent, and severity of the eruption.

Let me, first of all, direct your attention to the *constitutional treatment*:—

It is necessary in this, as in all other diseases, to make a careful examination of the internal organs, and to rectify, as far as it is within the scope of medicine, any deviation from the normal standard which you may detect, and which may be keeping up or aggravating the skin affection. You will be aided in this investigation by calling to mind what I said with regard to the causes of eczema, and with regard to those states of the system which are most likely to produce, or to intensify the severity of, the eruption. In fulfilling this indication, you must be guided by broad general principles, with which, I take it for granted, you are already familiar. But I must say a few words with regard to derangements of the digestive organs, and more especially to the regulation of the bowels.

Purgatives are very useful in cases of eczema, though, with few exceptions, they must be looked upon merely in the light of adjuvants to, or forerunners of, other treatment, and the medicine which is selected will depend upon the inclination of the practitioner, and the features which each case presents. If the tongue is loaded, the appetite bad, the liver torpid, as indicated by the light colour of the evacuations, and the bowels costive; and if, in addition, the patient is not very strong, small doses of grey powder, in combination with rhubarb and salicine or quinine, may be administered with excellent effect.

If the digestive organs are in the state just mentioned, and the patient robust, and especially if fulness in the hepatic region is complained of, occasional doses of calomel, alone or

in combination with scammony, may be resorted to with advantage, as they have the effect not only of correcting the torpidity of the digestive organs, but also of "cooling the blood," as the saying is, and of diminishing the cutaneous inflammation. They may therefore be given with the latter end in view, although the liver and bowels are not in a torpid condition. A calomel purge may likewise be prescribed occasionally, if the eruption is extensive, causing much irritation, and exuding copiously; and if you fear the occurrence of any untoward symptoms from its too rapid removal, by other, and more especially by local means.

With the same object in view, and much more universally employed than calomel, though, on the whole, not so useful, small doses of sulphur, in combination with magnesia or bitartrate of potash, may be taken every evening, and as good a preparation as any is the sulphur confection (Confectio Sulphuris) of the Dublin Pharmacopœia, of which about a teaspoonful may be prescribed. Besides being less effectual, in my opinion, than calomel, it has this additional drawback, that the sulphur is converted into sulphuretted hydrogen, and the secretions have accordingly a very unpleasant odour. It has this advantage over calomel, however, that it is in part eliminated by the skin, and acts beneficially upon that structure, so that it possesses alterative as well as purgative properties. A more pleasant and more elegant preparation is a solution of three or four drachms of sulphate of magnesia in water, with the addition of two scruples of bicarbonate of soda, and made to effervesce by the addition of half a drachm of tartaric acid. This may be repeated every second night. If the patient is of a full habit of body, and if, in addition, he lives too freely, and cannot be prevailed upon to live sparingly, a smaller dose of sulphate of magnesia (say ℥i to ℥ii) may be administered twice daily, from a sixth to half a grain of tartar emetic being added to each dose, so as to deprive him in great part of his appetite for a time. In this case the solution should not be administered in effervescence, else the nauseating action of the tartar emetic may be counteracted.

The doses which I have recommended are for adults, and are merely approximative, for of course some constitutions are more susceptible of the action of purgatives than others, and care must be taken to avoid the administration of mercurials as much as possible in the case of those with whom they disagree. Not long ago, for instance, I gave a couple of grains of calomel and three of grey powder to a little girl, which gave rise to the most profuse salivation, ulceration of the mouth, and swelling of the gums and submaxillary glands. Now, this is far more remarkable than the production of similar symptoms

in the adult, even with the same dose, for, as a general rule, as most of you are aware, it is much easier to salivate an adult than a child.

Having attended to the condition of the internal organs in general, and of the digestive organs in particular, the internal treatment now radiates in two directions, according as the eruption occurs in the case of those who are apparently in the most robust health, in whom the eczematous rash is called forth in virtue of some peculiar idiosyncrasy (see the causes of eczema) or of those who are scrofulous or debilitated from insufficient or unnutritious food, or from previous disease.

In the latter, nourishing food, tonics, especially those containing iron and cod-liver oil, are our sheet-anchors, and I have repeatedly cured very severe cases of eczema by the systematic administration, for a couple of months, of cod-liver oil and syrup of the iodide of iron, all other treatment of importance having been omitted. The following is a case in point, and you will probably remember that I purposely refrained from additional means of cure, in order that you might see the charming effect of the oil and iron alone :—

Lawrence D., aged about fifteen months, was brought by his mother to the dispensary, on October 9, 1862, affected with eczema impetiginodes. The eruption covered almost the whole body, with the exception of the fingers and feet, was very itchy, constantly exuding, and studded with crusts. The child was dreadfully emaciated, "just skin and bone," as the mother remarked. It could neither sleep nor eat, and was so weak that it had to be brought upon a pillow. The case looked hopeless, and, indeed, the child had been given up by the previous attendant; but acting upon what I have observed in similar cases, twenty drops of syrup of the iodide of iron in a teaspoonful of cod-liver oil were prescribed, to be repeated thrice daily, and the dose of the oil to be gradually increased up to a table spoonful.

On October 16 the child was better. The skin being still itchy, however, a lotion of dilute hydrocyanic acid (Ed. Ph.), containing twenty minims to the ounce of water, was ordered to be used thrice daily. The oil was omitted for a week, as it produced purging. With this exception, the oil and iron were continued uninterruptedly till November 17, about five weeks after the commencement of the treatment, when the mother brought the child out of gratitude to show how well it was. There was hardly a vestige of the previous eruption, with the with the exception of a few dry crusts and discoloured spots on the buttocks, which were rapidly disappearing. The child appeared to be in robust health; it was quite plump, and its cheeks rosy; its skin soft and white; its appetite very good;

and its sleep sound and refreshing. The medicine was to be continued for another month.

Here, then, is an instance of an infant cured of a frightful eczematous eruption, and rescued from the jaws of death by the internal administration of cod-liver oil and iron alone. In severe cases such as this, you will sometimes find it of advantage to rub the oil into the skin of the whole body two or three times a day in addition to its administration internally. Cod-liver oil is sure to do good in these cases if the stomach bears it, and especially if it is taken greedily and with relish by the patient. This is oftenest observed in children whose mother's milk is below par. When this is detected, the mother should no longer give her child the breast, and, amongst the higher classes, who can afford to have a wet nuse, a good one should at once be procured. Amongst the lower orders the child should be fed, in great part, "upon the bottle," a mode of nourishment which, though inferior to the employment of a good wet nurse, is much more desirable than the exclusive use of the deteriorated milk of the mother. Those children whose health has been deteriorated by imbibing their mother's milk too long—and instances are often met with, especially amongst the poor, of children being fed upon the breast, not for months, but for years—should be weaned without delay, and appropriate nourishing food substituted.

These children often suffer from diarrhœa, but while special remedies, guided by general principles, may be cautiously employed towards its removal, you must bear in mind that it is often the result of debility, in which case you may expect it to disappear spontaneously when the diet is altered and the general health improved.

In adults under similar circumstances, cod-liver oil and iron are almost equally serviceable, and in them, and likewise in the case of children, small quantities of stimulants may in some cases be superadded, though it is generally advisable to use them with caution.

Some patients, and adults oftener than infants—for the latter rarely refuse it if the system really requires it—cannot take cod-liver oil, in which case cream may be substituted, though it is not so beneficial; and, while taken with relish at first, it is more likely to derange the stomach in the long run. So that if the case is undoubtedly one which calls for the use of the oil, do not let the patient put it aside lightly, but make repeated trials of it in varying doses, and always let the bowels be carefully regulated before administering it. Sometimes it is tolerated better by swallowing a small pinch of magnesia about half an hour after the oil is taken, as was recommended lately in some of the medical journals.

When the appetite is very deficient, a pure tonic may be substituted for a ferruginous one with advantage, such as small doses of quinine and sulphuric acid in a bitter infusion; or, if the stomach is too weak even for this, you may try a little dilute sulphuric acid, which should be given in half-drachm doses twice daily in a wine-glassful of cold water, and which is usually well borne.

But, let us now take the opposite class of cases—and very common they are—in which the patients are neither ill-fed, scrofulous, nor debilitated; but, on the contrary, appear, with the exception of the eruption, to be in a good state of health. In such instances, then, what means, operating upon the system at large, are we justified in having recourse to?

Some recommend the abstraction of blood by means of the lancet, but this is hardly ever necessary; indeed, I have neither had recourse to it myself, nor seen it employed by others; for, while many severe and extensive eruptions in plethoric persons have come under my observation, I have found purgatives—especially those containing calomel—answer all the ends in view. The local abstraction of blood by leeches, cupping-glasses, or scarifications, may sometimes be resorted to with advantage, if the patches of eruption are much inflamed, and especially if the lower extremities are affected, as these parts, for reasons formerly mentioned, are more liable than others to congestion and its results. Even local bleeding may, however, be dispensed with in the majority of cases, although I am aware that this opinion will be regarded in the light of a heresy by some.

The diet must be very carefully regulated, and the patient warned to eat very moderately and slowly, and to masticate his food well. A simple mixed animal and vegetable diet may be recommended, dressed dishes, pastry, pickles, spices, strong tea, and coffee, being particularly avoided. The use of wine, spirits, and malt liquors must, in general, be suspended for a time at least, though in some instances they may be taken sparingly. But you must be cautious, in the case of those who have previously been in the habit of taking them in excess, of discontinuing them all at once, and you must remember, in reference to prognosis, that the cure of an eczema is much more difficult when the patient has been much addicted to the use of stimulants.

In some cases you will find it of advantage to prescribe milk diet for a time, all animal food being avoided.

In the cases which we are now considering, and applicable, to a certain extent, to the class previously alluded to, in conjunction with the means then recommended, there are three

classes of internal medicines upon which I place considerable reliance, but especially upon the first, for the removal of the eczematous eruption. These are the preparations of arsenic and sulphur and alkalies.

Of the arsenical preparations, the one which I am most in the habit of employing is Fowler's solution (Liquor Arsenicalis, Ed. Ph.), although any of the others may be selected, according to the taste of the Practitioner. I think it better, however, that the Physician should limit himself as much as possible to one preparation of arsenic, for he thus becomes more familiar with its exact mode of operation, and with the probable dose for different constitutions. An adult may commence with five minims thrice daily, and at the end of a week or so, if it agrees, the dose should be increased by a drop every second or third day, till the disease begins to yield or the medicine disagrees. I do not think it necessary to stop it if slight irritation of the eyes or puffiness of the face is induced: but if these symptoms are at all aggravated, and especially if they are accompanied by pains in the stomach and head, anorexia, and nausea, the dose should be diminished, or in some cases omitted for a few days. You must on no account stop its administration altogether, however, because these physiological effects are produced, and I thoroughly endorse the statement of Dr. Begbie, that, "in order to secure its virtues as an alterative, it will be necessary to push the medicine to the full development of the phenomena which first indicate its peculiar action on the system. Arsenic, as a remedy, is too often suspended, or altogether abandoned, at the very moment its curative powers are coming into play. The earliest manifestation of its physiological action is looked upon as its poisonous operation; the patient declares that the medicine has disagreed with him; forthwith the physician shares his fears; the prescription is changed, and another case is added to the many in which arsenic is said to have failed after a fair trial of its efficacy." It is necessary to observe, however, that the appropriate dose of Fowler's solution varies in different individuals, and that, while five minims thrice daily soon disagree with some, ten, fifteen, twenty, or even thirty may be taken by others with impunity and with benefit.

To prevent the medicine from deranging the stomach, it should always be given *immediately after* food, and in persons whose digestive organs are weak, a tonic infusion, such as the infusion of cascarilla or gentian, forms a very good vehicle for its administration, and in some cases even a few drops of morphia may be superadded if the stomach is very easily deranged.

As the disease yields, the dose may be gradually diminished, but in no case should its use be suspended till some time after the complete removal of the eruption.

In the case of infants at the breast, it is advisable to administer the arsenic to the mother, whose milk thus furnishes not only nourishment to her babe, but likewise an antidote to its complaint. In children of one or two years one minim may be given twice daily, and the dose gradually increased.

In some cases you may think it advisable to combine arsenic with mercury, as in Donovan's solution (solution of the hydriodate of arsenic and mercury) of which ten minims may be administered thrice daily, the dose being gradually increased. Each drachm of the solution contains about $\frac{1}{12}$th of a grain of oxide of arsenic, $\frac{1}{4}$th of a grain of oxide of mercury, and $\frac{5}{7}$ths of a grain of iodine in the state of hydriodic acid in chemical combination.

And sometimes you may find it beneficial to prescribe arsenic along with iodine, and without mercury, in which case you will find Neligan's prescription, which he names the iodureted solution of the iodide of potassium and arsenic, a very good one indeed, and one which is much used.

I very frequently make use of a private mark, known to two or three apothecaries, in prescribing arsenic, and I think with good reason. For instance, I know of a lady for whom Fowler's solution was prescribed, who, finding that she was improving under its use, increased the dose of her own accord, and thereby induced poisonous symptoms. Some time after this, she consulted Cazenave, and on her return from the Continent, she came to her family physician, and informed him that she had never been able to take arsenic since she had administered to herself the overdose. The doctor, on looking at Cazenave's note, found that she was at that very time taking arsenic without knowing it, under his orders, and with good effect. Then again, some people who consult me have already taken arsenic without benefit, and either refuse to take it again, or are so sceptical of its efficacy, that they take it with great irregularity, and are convinced in their own minds that they are to derive no benefit from it—conditions which are very prejudicial to the due operation of any drug.

Very often, in these cases, the previous arsenical course had been improperly carried out, or not continued sufficiently long, and we are thus compelled either to give it in a concealed form, or to dispense with the use of a most powerful therapeutic agent.—*Med. Times and Gazette, June* 27, 1863, *p.* 650.

51.—ON THE TREATMEMT OF ECZEMA.

By Dr. J. Wallace, Dalston, Carlisle.

[We give one out of several cases related by Dr. Wallace, to illustrate a mode of treating eczema, which we have ourselves followed for many years, and which we know is usually most successful. The plan of treatment consists in getting the patient or nurse to keep the parts continually moist with lint saturated with a very weak alkaline lotion. The proper strength is about half a drachm of carbonate of soda to eight ounces of water. It is a *sine quâ non* that the lint should never be allowed to dry, otherwise the application is worse than useless.]

Case.—A. B., a quarryman, aged thirty-four, consulted me in October, 1861, who had a skin disease of six years' duration, extending over both cheeks, of a circinate form, and communicating over the nose. Had been in two infirmaries, consulted many medical men, and had all sorts of ointments and lotions applied, which invariably made the disease no better, and oftener worse. In every other respect he was healthy. On examination, the diseased surface presented the appearance of dry, indurated, laminated scales, firmly impacted, overlaying and dovetailing with each other, so as to form a crust about one-eighth of an inch, nearly, in thickness, over both cheeks. On the nose it was thinner and moist. Round the margins was a slight erythematous blush, the incrusted morbid epithelium flattening off to the healthy skin, and at the junction of the two a watery fluid he said sometimes oozed. On careful and repeated inquiry it was found that at first there was no hard incrustation, but that a raw surface had constantly oozed watery fluid, &c.; in short, that it was eczema utterly changed in its character by the multiplicity of intended remedial applications—the last one having been mercurial ointment. He was ordered to apply the alkaline wash—a drachm of carbonate of soda to half a pint of pure water—by means of lint and a mask; the lint to be moistened three or four times daily with the lotion, and, as he was working in a quarry, to be moistened with pure water frequently from without, as he found it becoming dry. Also to take fifteen minims of the tincture of the muriate of iron, thrice daily, in water. In four days the crusts came off, and a healthy skin was partly formed over the diseased surface. It went on improving, and in three weeks the disease had vanished, and his face was, as he expressed it "like other people's."

I put more faith in the external application than the internal alkaline remedies with arsenic, although I do not ignore the latter; but I have cured eczema, again and again, by means of the former only. What the therapeutic action of the alkaline

lotion may be, is a matter of speculation. It has peculiar local sedative effects, while it is also gently stimulating; but may there not be some peculiar organic acid which by an irritating influence raises the eczematous vesicles and sustains the acrid discharge which it neutralizes and ultimately destroys, so as to permit the speedy formation of new cuticle? Whether or not this may be the case pathology will ultimately reveal; but, in corroboration of this idea, I have often found the alkaline lotion of great use in old constitutional and irritable ulcers, evidently from the same cause; and, indeed, the chief ingredient in every old wife's herb-salve in the country is alkaline.—*Lancet*, *Aug.* 29, 1863, *p.* 259.

52.—ON THE TREATMENT OF PSORIASIS AND LEPRA.

By Geo. Nayler, Esq., George Street, Hanover Square.

The *treatment* of these as well as other affections of the skin will be regulated by the age and constitution of the patient, the stage of the disease, and its complication or otherwise with any other disorder. When the inflammatory symptoms run high, which is frequently the case at the onset, they must be subdued by the ordinary means, amongst which antimony deservedly holds a high place; and if there be any tendency to gout or rheumatism, the addition of colchicum will be found useful. With the abatement of the inflammation, then those remedies which are supposed to possess a specific value in certain skin complaints may be commenced; and as it is not easy, within the limits of this paper, to enter into a detailed explanation of the mode in which, at the hospital, arsenic is given in solution, acid or alkaline, or the bichloride, &c., it will be enough to state that, for all practical purposes, their equivalents may be conveniently represented by the ordinary preparations of these medicines, as the solution of the arsenite of potass, the solution of bichloride of mercury, or the iodide of potassium, of the London Pharmacopœia. In the exhibition, however, of these powerful agents, which are always given in minute doses, care must be taken to discontinue them whenever any constitutional symptoms arise. This will not often occur when properly given, and it is seldom that we find instances of the injurious effects of arsenic amongst the large number of out-patients for whom this mineral is prescribed. Dr. Fowler, in his table of doses, considers twelve drops of the solution which bears his name as constituting an ordinary dose for an adult, or above the age of eighteen years; and, commencing with two drops for a child of two years, increases the dose by an extra drop, corresponding to every additional year, to the age of eight. This standard would appear to be too high, as far as its exhibition is concerned, in

the treatment of skin diseases. Pereira states: "I have seen very minute doses of arsenic given to patients affected with lepra, and continued for many days, without being able to detect the least indication of its action on the system, except the amelioration of the disease." Indeed as a general rule, three minims of the solution of arsenite of potass may be said to represent the quantity for a dose that will be found most useful in psoriasis and lepra, which, more than any other varieties of cutaneous complaints, require arsenic for their cure.

Where diseases are of a syphilitic origin, it will be advisable, in lieu of arsenic, to administer mercury with the iodide of potassium—the mist. hyd. iod. of the hospital pharmacepœia, containing for a dose the eighth of a grain of the bichloride and three grains of iodide of potassium. It should be remembered that the effects of mercury are more likely to be manifested than those of arsenic, and we should be on our guard to suspend or omit it it altogether when untoward consequences are indicated. Early age is no impediment to the use of either mineral.

In the way of local treatment, some mild mercurial will answer best, or the red precipitate, to which creasote may be added. A formula much in use at the hospital is the following: Creasote, six minims; nitric oxide of mercury, ten grains; lard, one ounce. It is important to bear in mind that much difference exists between the ordinary creasote obtained from wood tar and the German creasote prepared from coal tar, which is almost identical with carbolic acid, and greatly to be preferred to any other kind. Among other applications may be named the compound mercurial ointment, consisting of six grains each of the white and red precipitate to an ounce of cerate. Or, again, the red ointment, which is thus prepared: Bisulphuret of mercury, nitric oxide of mercury, of each six grains; lard, one ounce. The patient is directed to use one of these ointments before retiring to rest, while in the day-time he sponges the surface with a lotion.

Of late, carbolic acid has been largely tried, and with considerable success. It is made as a lotion in this way:—Carbolic acid, fourteen grains; spirits of wine, half an ounce; glycerine, one ounce; water, one pint. Another, the carbon lotion, which is of benefit when much irritation exists, is here given: Solution of carbon detergens, half an ounce; glycerine, one ounce; water, one pint.

In a large patch of lepra that has become chronic, it will sometimes be advantageous to blister the surface. The vesicating solution should be painted over the part with a camel's-hair brush, and allowed to remain untouched for two or three days.

Various other remedies are in repute among the Continental surgeons, as the decoction of dulcamara, &c. Cazenave speaks

highly of the tincture of cantharides in those instances in which the disease has reappeared without evident cause. He recommends the tincture to be given at first in doses of four to five drops in water, and gradually increased if no serious symptoms arise, to twenty-five or thirty drops a day. He gives a case of lepra of eighteen years' standing that was cured by its means. The same authority commends the internal use of the ioduret of sulphur in local psoriasis, in the proportion of twelve to twenty grains to an ounce of lard. The "huile de cade," or oil of juniper tar is much in vogue in France. It may be mixed with equal parts of simple cerate, or used alone. M. Hardy, in his "Leçons sur les Affections Cutanées," says that it should be well rubbed into the sound portion of integument between the patches as well as into the latter.

The balsam of copaiba is also favourably mentioned by French surgeons. Hardy relates an instance of a patient with psoriasis, who at the time was also suffering from blennorrhagia, and to cure the latter complaint he ordered him to take copaiba, when, to his surprise, the cutaneous disease disappeared.—*Lancet, Aug.* 29, 1863, *p*, 243.

53.—ON THE TREATMENT OF CARBUNCLE.

By Augustin Prichard, Esq., Lecturer on Surgery in the Medical School, and Surgeon to the Bristol Royal Infirmary.

[For the last fifty years the approved treatment of carbuncle has been the crucial incision. Many other plans have been recommended, but have not survived their birth in the journals. In a great majority of cases the crucial incision is is successful.]

The caustic plan has been revived, and with the sanction of well-known surgical names. Dr. Physick, of Philadelphia, seems to have been the first to bring it once more prominently before the profession; and in May, 1857, the present Mr. B. Travers, published (Lancet, vol. i, 1857) two or three very interesting and convincing papers on the subject, and it was then that my attention was first drawn to the caustic treatment, before which time I had invariably marked a deep cross on the carbuncles, as my neighbours did. In Nov. 1856, Mr. Higginbottom published (Lancet, vol. ii, 1856) a short but very comprehensive little article, recommending a plan very similar to that which I am about to advocate. Mr. Syme, on the other side of the question, says, in his ordinary very distinct mode of expression, "the application of caustic is the extreme of absurdity."

I must, at this point, proclaim myself an unflinching advocate

of the caustic plan of treatment in a slightly modified form, and a strenuous opponent of the crucial incision. The caustic to be preferred is the stick of potassa fusa, and it is to be used freely but carefully in the following way. In whatever stage the carbuncle is, the potash is to be applied and rubbed in freely in the centre, until an eschar is fully formed. In the earlier stages, if the skin is still unbroken, it must be used for several minutes, until the death of the central portion is ensured, and the size of the slough to be made varies of course according to the size of the carbuncle. In general terms, the diameter of the skin to be destroyed should be a fourth, or even a third, of the diameter of the indurated and inflamed mass. This is generally sufficient to stop the progress of the disease: but it is far better, at the same time, to use some application of an opposite nature to the circumference, and for this purpose the nitrate of silver in substance, or in strong solution of two scruples to an ounce, may be used, according to Mr. Higginbottom's plan, or, as I prefer it, a strong solution of iodine in collodion, which has a very excellent effect in destroying the erysipelatous element of the disease. I believe that my father was the first to use a strong tincture of iodine for erysipelas of the head and face; and the *pigmentum iodinii* of the Bristol Royal Infirmary, made by the solution of forty grains of iodine in an ounce of rectified spirit, has now come into general use in such cases.

We have lately added to our Pharmacopœia here a "*Pigmentum iodinii c. collodio*," made with a scruple each of iodine and iodide of potassium to the ounce of collodion, and with very favourable results, for erysipelas, whether idiopathic or following surgical operations; with the exception that, if used on the face, the eyelids must be left intact, for it causes so much contraction of the surface, that there is danger lest the patient should not be able to shut his eyes afterwards, and this accident I have seen before now.

Mr. Higginbottom, in his paper quoted above, speaks most truly of the nitrate of silver as a preservative, and the potash as a destructive agent, and seems to have found, as I have, that this fact is not sufficiently recognised or appreciated. The contraction of the collodion film acts very beneficially on the capillaries of the skin, and the particular effect of the iodine is more continued, because of the mechanical adhesion of the collodion to the surface. With this pigment the indurated part is to be daily painted, without waiting for the first layer to come away, and the relief from it after the use of the potash is very marked. Poultices are to be avoided altogether. A dressing of the resin ointment, mixed with an additional quantity of turpentine or some camphorated spirits, is to be

used daily over the surface, and in most cases no change need be made until the patient is cured.

The other points in the treatment are the greatest attention to cleanliness in the dressings, and the removal of the discharges, which are easily ensured by warm bathing and cotton wool; and the strictest care is necessary not to interfere with the slough by any dragging or cutting, so as to cause an effusion of blood.

To a carbuncle which has begun to slough by the central apertures, the caustic is to be applied in the same way, and the effect is to turn the sloughing skin into a gelatinous black mass, which melts away and is gradually removed with the dressings, the iodised collodion pigment being applied around the circumference as before. By this plan of treatment the slough certainly separates earlier than by the incision, and comes away in a half dissolved state; and the disease being checked at the margin, contraction of the entire sore goes on from the granulating process within, frequently for many days before the more solid part of the eschar has been quite thrown off from the living tissues.

The chief advantages which we claim for this plan of treatment, as contrasted with the incision, are two in number, viz., firstly and principally, the safety of the patient; and, secondly, the rapidity of the cure.

1. *The patient's safety;* the proofs of which we may conveniently examine under the same heads as those used before in describing the perils of the disease, or the causes of mortality. The risk of hemorrhage, from which some patients die, is altogether done away with. At the time of the application of the caustic, when the skin is beginning to slough, a few drops of blood escape sometimes, but they are at once dissolved by the caustic, and this is the only blood shed in the progress of the case; and, if the potash is applied still earlier in the treatment, not one drop is lost, and this is no slight advantage.

Exhaustion, as a cause of death, is rendered much less probable, partly because no blood is lost, but principally because we imitate and support nature's efforts by making an artificial slough, of comparatively small size, and the suppuration is only what is required for the separation of the dead skin and cellular membrane, the further secretion being very much lessened by the early loosening of the slough and the application of the iodine paint.

Thirdly, I believe that pyæmia or purulent infection, the most frequent cause of death and the most hopeless complication, will not occur by this method of treating the disease.

I have already stated my conviction that pus finds its way into the open mouths of the divided vessels, and thus the

system is contaminated. A cut through the hard brawny tissues must leave many vessels held open mechanically, in the midst of the suppurating and sloughing membranes, in the state of all others best adapted to cause the entrance of the poison.

The only two fatal cases of carbuncle which I have been ever called to, were of this nature. Both were clergymen, middle-aged, well nourished, and in fair health at first; and in both the treatment had been by incision. In one the sloughing process was never completed; in the other the wound had even healed, and become firm, and the patient sank from numerous extensive formations of pus in the joints and cellular membrane, in various parts of the body.

A medical friend of very large experience in India, where the natives, soldiers, and others, were always under his care, and where carbuncle is a very common disease, informed me some years ago that he had long given up the incision because of the mortality from pyæmia, and that his treatment has been much more successful since.

Seiche treated eleven patients in the ordinary way with incision, and six died; five of them from pyæmia. He treated twelve with collodion, and all recovered.

The risk of death by the extension of the inflammation to the deeper and more important structures of the body, or by tetanus, is nearly the same whatever plan of treatment is adopted; but these dangers are not great, because of the extreme rareness of these accidental complications. Whatever difference there is must be in favour of the caustic method, because the slough is more speedily loosened.

2. *The rapidity of the cure.*—The second advantage which I claim for the caustic, viz., shortening of the time required for the cure, although not equal in importance to the safety of the patient's life, is nevertheless no slight one. It is not quite so easily capable of absolute proof: but I have as little doubt about it as about the others.

The explanation of the case is sufficiently easy. Important time is saved at first, because the slough is formed more quickly. A cut will let free the tissues, and check the inflammation and the progress of the disease at the circumference; but whether the skin has sloughed already or not, the central part will, in almost every instance, die, and have to come away; and the special chemical effect of strong caustic alkali upon the tissues of the part, in whatever state they may be, whether living or dead, saves the patient's time in another way. As I have before noticed, the potash is a powerful solvent of the tissues: pus, blood, and the gelatine of the skin and the fat, are liquefied and dissolved by it, if used in the concentrated

form of potassa fusa ; and the slough already formed and the skin which is about to give way become semifluid, and are washed away with the secretion ; the solid elements remaining being the white and yellow fibre of the skin and areolar tissue, with pus, coagulated lymph, and some of the cellular membrane and fat which the caustic has not been able to reach.

It is important to remember that the action of the remedy upon the part to which it is applied, is chemical entirely ; and that the good effect upon the rest of the disease is from the early formation of a slough which is easily broken down in its substance.

The resulting sore is undoubtedly much smaller by this treatment. After incision, the quadrants of skin partly slough, and are partly retracted, so that ultimately the sore is circular, with a diameter of the length of the cuts ; whereas by the potash and iodine plan the centre gives way, and all the rest of the skin retains its vitality and its former position ; and even though the edges appear at first to be undermined, by the time the slough has come away the greater part is generally filled up by granulations ; and, as I have before said, contraction of the whole sore has commenced.

To complete my remarks, I must shortly allude to the general treatment. The indiscriminate use of stimulating food and drink is to be avoided. Some gentle aperients are required at first ; and afterwards the medicine best suited for the majority of cases, is a mixture of ten grains of chlorate of potash with ten minims of the tincture of the sesquichloride of iron. Food in a nutritious and fluid form is required, and occasionally wine or beer, if the discharge is very free, and the pulse seems to require it ; and if there is much weakness with sweating, quinine and acid, and perhaps an opiate at night.

Mr. Higginbottom, whose name deserves all honour, for he is a staunch and honest opponent of the vices of the alcoholic treatment, makes the remarkable and very satisfactory statement that he has never prescribed alcohol in any form for this malady, and that he never saw a fatal case.

The question of pain will arise, and may with some be an element in the determination as to the plan of treatment ; but it has no weight at all compared with the question of the patient's safety. When a large surface is touched with the caustic freely, there is sometimes much pain ; but in those cases a long incision would be necessary, and patients dread the caustic much less than the knife ; and I have used the freezing mixture of pounded ice and salt, applied for five minutes to the surface, with the effect of almost destroying the feeling without interfering with the chemical action of the alkali. The advantage in this respect is all in favour of the caustic ; and the

freedom from pain which the patient experiences, as soon as the first burning has passed, is very marked.—*British Medical Journal, August* 8, 1863, *p.* 154.

54.—FINE CLAY AS A DRESSING TO SORES.

Dr. Schreber of Leipzic recommends the use of clay as the most "energetic, the most innocent, the most simple, and the most economical of palliative applications to surfaces yielding foul and moist discharges." He moreover considers that it has a specific action in accelerating the cure. Clay softened down in water, and freed from all gritty particles, is laid, layer by layer, over the affected part to the thickness of about a line. If it become dry and fall off, fresh layers are applied to the cleansed surface. The irritating secretion is rapidly absorbed by the clay and the contact of air prevented. The cure thus goes on rapidly. This clay ointment has a decisive action in cases of fœtid perspiration of the feet or armpits. A single layer applied in the morning will destroy all odour in the day. It remains a long time supple, and the pieces which fall off in fine powder produce no inconvenience.—*British Med. Journal, April* 11, 1863, *p.* 381.

[We can quite corroborate Dr. Schreber's observations, having used fine clay poultices for several years—chiefly, however, in cases of local inflammation requiring the application of cold. Rags wet in water or goulard water so rapidly become dry and hot that the benefit from the cold application is completely lost. There is no dirt when the clay is enveloped in a piece of fine linen and is not too fluid in consistence.—Eds.]

55.—ON A CASE OF ANÆMIC SPHACELUS.

By Dr. A. S. Myrtle, Harrogate.

[Colonel A. B., aged forty-six, five feet ten inches in height, healthy looking, strongly built, and of sanguine temperament, consulted Dr. Myrtle, with the following symptoms:]

Fingers of both hands, especially those of the right, are pale and cold; the right little finger, from its point to its middle, feels as cold as ice, and its ungual phalanx is blue—looks as if dead; under the tops of each nail, and extending across there is a purple line about one-tenth of an inch in breadth.

No sign of inflammatory action is visible on either dorsal or palmar aspect of the hands, and the thumbs are natural; none of the fingers are altered in shape, nor are they destitute of sense, except the last phalanx of the right little finger.

The ears are much colder than natural, have a mottled appearance, and exhibit on the outer and posterior part of each helix a number of ecchymosed patches.

I told Colonel B. his symptoms indicated great want of power as regards the circulation; that he was not to look upon them as trivial, but to watch them. I advised him to live more generously than usual, and to drink a pint of port, at least, after dinner. The fingers and ears to be rubbed morning and evening with turpentine liniment, and covered with cotton wool; all cold ablutions to be discontinued.

Aug. 14th. He tells me his fingers are still subject to become cold and numb on getting out of bed, and that it is some hours before circulation is established and warmth restored. They look very much better, except the right little one, the lower half of which is evidently dead; the point has become black and shrivelled—is mortified, in fact. I observe ecchymosed patches on the dorsal surfaces of two or three fingers similar to those on the ears. The ears are better; no increase of discoloration, and less painful to the touch; pulse 72, weak; bowels regular; urine healthy; appetite good. To continue treatment, and to take fifteen drops of turpentine three times a day on a piece of sugar.

15th. Better; little finger more shrivelled.

16th. Has passed a sleepless night, having been kept awake by severe and constant burning pain in the feet and toes; the feet are pale, cold, and clammy, the extremities of the toes being bluish and tender to the touch; the fingers, except the little one, are well, and the ears are nearly so. To keep in bed, have the feet well rubbed with a dry warm towel, then with the turpentine liniment, and afterwards to be wrapped in cotton-wool. To take thirty drops of turpentine, and with each dose one-sixth of the following mixture:—Sulphate of quinine, twelve grains; chlorate of potash, one drachm and a half; syrup of ginger, six drachms; camphor mixture, to eight ounces. To take two of the following pills at bedtime:—Extract of hyoscyamus and extract of conium, of each twelve grains; camphor, six grains: make six pills.

17th. Passed a better night; feet warmer, toes less painful. Nothing, he says, annoys him but his little finger, which is dry, black, and cold as marble; on tapping the table with it, it sounds as if it were made of stone; the line of separation is beginning to show itself, but is by no means distinct. Continue treatment.

18th. Last night he felt his feet so much better, that he left his room, and played two or three games at billiards. This morning he finds his feet better, and has passed a tolerable

night; thought the exercise of last night did him good. No change in appearance of finger.

19th. Feet well; out walking before breakfast.

21st. Feeling that a separation of the dead portion of the little finger from the living would prove tedious, and having never seen a similar case, I advised Col. B. to have another opinion; and with that view he went to Leeds, and consulted Mr. Samuel Hey. This gentleman examined him carefully, advised that the finger should not be meddled with, recommended the addition of citrate of iron to his quinine mixture, the discontinuance of the stimulating embrocation, fearing it might induce excessive action in a part already deficient in vitality, but to keep the finger warm. In his note to me he asks the question, "What is the cause of gangrene here?—is it purpura, or diseased blood-vessels?"

24th. The skin of the fingers and ears, underneath which patches of ecchymosis were observed, has desquamated, leaving healthy cuticle. The line of demarcation is now distinct, but there is no appearance of inflammation about it, no discharge, no smell.

Sept. 2nd. I was sent for this morning in consequence of Col. B. having suffered during most of the night from a severe and constant burning pain in the second toes, the ends of which and underneath the nails look bruised. He cannot bear to hang the feet down for above a few seconds, and dreads the slightest pressure. He looks anxious, and fears that the toes will mortify like the finger. On pressing the ball of the foot, or any part of the great toe, pain is occasioned; the feet are natural in appearance and temperature. As the treatment employed during his former attack proved successful, I had again recourse to it; adding an opiate at bedtime, with a little colchicum, as I began to think that the symptoms bore some resemblance to rheumatism.

4th and 5th. Symptoms somewhat improved.

6th. Passed a bad night; pain in toes on the increase, I therefore again recommended a consultation with Mr. Hey, which I was fortunately able to attend. After a careful examination, Mr. Hey expressed his opinion that the *causus mali* was to be found in the diseased condition of the blood-vessels, with a tendency to inflammation of the fibrous tissues. He had seen two similar cases, and thought it not improbable that the second toes might sphacelate. We agreed to try the effects of painting the balls of the feet and toes with tincture of the muriate of iron, and to give the following mixture:—Citrate of iron and quinine, one drachm; iodide of potash, sixteen grains; bicarbonate of potash, a drachm and a half; infusion of quassia to eight ounces: one-sixth three times a

day. The soothing pills to be continued, and the feet to be kept in wool.

7th. The patient had a better night; pain moderate.

9th. Very much better; has had no pain in feet, and can bear firm pressure on the toes.

10th. Perfectly well. To discontinue the application of the tincture of iron.

12th. With the exception of the finger, the patient is quite well, and intends leaving to-morrow. The pulse is stronger, and the circulation in the extremities is free and natural. There is no attempt in the finger at separation of the dead part from the living, and I fear it may be months before that is effected. I impressed upon Col. B. the necessity of keeping his hands and feet warm and dry, and of avoiding exposure to wet and cold as much as possible. I also told him that he might with advantage continue his tonic mixture for some time.

After leaving Harrogate he went south, and I occasionally heard of him. He continued much in the same state as when I last saw him, until the end of November, when, after having been out shooting, he experienced a return of the pain in his great toe, for which he applied to Mr. Hussey, of Oxford, under whose judicious treatment he rapidly recovered. The finger was shown to more than one eminent surgeon in town, and on Jan. 28th the gangrenous portion was amputated by Mr. Walter J. Coulson, chloroform being administered. In a few days, the stump progressing favourably, Col. B. retuned to the country. About a month after the operation, Mr. Coulson tells me, a small abscess formed at the phalanx; on opening this he found the bone exposed, and had no doubt that a small portion would exfoliate. He remarks in his letter, that "since the operation there has been less pain in the fingers and toes, and the patient has slept better."

Remarks.—I have called this a case of anæmic sphacelus because I believe the death of the little finger and threatened mortification of the other fingers and toes arose chiefly, if not entirely, from their bloodless condition. I have found no similar case on record; all the cases of spontaneous gangrene I have perused are attributed to mechanical obstruction of the circulation, by means of plugged arteries, osseous degeneration, atheroma, cold, &c., or are described as local manifestations of constitutional evils, such as purpura, ergotism, typhus, &c. The only case which is not assigned to one or other of these conditions is recorded in the *Provincial Medical and Surgical Journal* for 1846, p. 302; but even here, "although many were the conjectures as to the pathology," the fact that mortification was preceded by "slight febrile symptoms with

petechiæ for four days" (how many more?) points to toxæmia of one kind or another as the exciting cause of gangrene. I am satisfied that none of the above-named conditions existed in Col. B.'s case.

Mr. Hey suspected disease of the arterial coats; but he only saw the case twice. After many careful examinations, I came to the conclusion that the arteries were healthy; and on Feb. 19th Mr. Coulson writes: "I am inclined to take much the same view of the case as you have done. Of one thing I am certain, and that is, that there is no disease in the arteries themselves. I believe with you that there has been a want of power in the *vis a tergo* of the blood, and, in addition, that there has been an excess of fibrin in the blood, favouring coagulation. I speak confidently respecting the condition of the arterial coats, for I carefully examined the radials and other superficial vessels, and found them all alike of normal suppleness."

I cannot express my views of the pathology of this case better than by copying the remarks I find in my case-book:—

After carefully considering the history of this case, I am satisfied that the whole symptoms arise from, and may be explained by—

1st. Feebleness of the circulation, from want of power in the *vis a tergo.*

2nd. Lowering of the vitality, from deficiency of nerve-force.

There may have been a tendency to inflammation of the fibrous tissues, or an excess of fibrin in the blood, but we cannot say positively that there was; whilst we can say that the heart's action was extremely feeble, and consequently that the circulation, especially in the extremities, was languid and imperfect. And, considering the constant haul upon Col. B.'s physical powers and nervous sensibilities, I think we need not wonder that he had nigh become bankrupt as regards that principle of life, nerve-force, which must imbue the whole man in order that he may not only enjoy perfect health, but be able to resist certain pernicious influences to which he is frequently exposed. The portion of the little finger which was lost was dead for some time before I saw it, and in my opinion might have been saved had it received in time similar treatment to its fellows.

One word as regards treatment. Had I known when Col. B. was under my care the power digitalis possesses as a cardiac stimulant or tonic, I would have given it a trial. I had been in the habit of using it in heroic doses in delirium tremens, but then I only looked upon it as a counter-poison to alcohol. I have used it as a tonic lately in a case of cardiac debility with irregular action, consequent upon epilepsy, with great benefit;

and had I an opportunity, I would employ it in a case similar to that whose history I have now related.—*Lancet, May* 20, 1863, *p.* 602.

56.—HOW TO PREVENT PITTING AFTER SMALL-POX.

By Dr. F. Bowen, Upper Berkeley-Street, Portman-Square.

An incident happened to me some thirteen years ago which induced me to devote much attention to this subject ever since, not only in this country, but in some of the large Continental cities.

In the year 1850, I was connected with the Marine and Emigrant Hospital, Quebec, Canada. I had been directed by the senior surgeon, Mr. Douglas, to puncture the vesicles on the face and neck of one of the Hospital patients then suffering from small-pox with a needle dipped previously in a strong solution of nitrate of silver. I felt sceptical as to the success of this treatment, and secretly determined to apply the needle and solution to the vesicles on one side of the face and neck only, and watch the result. I did so. The patient recovered; but the disfigurement was really frightful, for while one half of the face was deeply pitted, the other half was smooth and free from spots, as before the attack. The superintending medical officer was not inclined to discharge this patient, but ever and anon produced him before the class in the lecture-room, where he, poor fellow, was laughed at, while I was twitted. At last the man turned rusty, and threatened to do me some personal injury. To my great relief, he was induced to leave the country, not before a purse, however, had been collected for him, towards which I subscribed most liberally.

Among the many plans recommended, and all of which I have tried over and over again,—charcoal and starch and mercurial plasters; collodion; solution of india-rubber with chloroform; sulphur; iodine; nitrate of silver; down to tripe-water, much in vogue among the poor,—I have found none so effectual, none so easy of application, and none so altogether free from annoyance to the patient, as puncturing the vesicles with a needle dipped in a solution of nitrate of silver. I have used it, I may safely say, over 300 times with most satisfactory results.

1. When do I punctured the vesicles?
2. What kind of needle do I use?
3. What strength of the solution of nitrate of silver?
4. What results from this treatment?

1. About the fifth to the seventh day,—it depends on the development of the vesicles,—when the small vesicles, some-

what depressed in the middle, surrounded by an inflamed margin, and circular, can be seen on the top of each pimple; certainly before the contained matter assumes the appearance of pus. Even in the confluent forms I would puncture, and have always done so; but I cannot speak with the same confidence with regard to results as in the more common or modified small-pox. In the former cases there are generally grave and serious complications of one form or other to deal with, and which tend to an unfavourable issue of the case.

2. The kind of needle I use is the one commonly employed for twisted suture, flat and sharp at the point; it makes its way very easily, carries with it enough of the solution for each vesicle, and its shape favours a slight discharge, on withdrawing the instrument, which can be absorbed by lightly touching the part with a piece of soft cotton wool held in pliers.

3. The strength of the solution I use is ℈iss. to the ℥j. of water; it is strong enough to effect the change sought to be produced; what more can be required? In twenty-four hours the result is apparent, the vesicle has dried up, no itching or unpleasantness remaining.

4. This results from the treatment: the application in the way recommended is not tedious; the nurse can do it; it does not cause the patient the slightest inconvenience, which is more than can be said of the many disgusting appliances one sees in daily use; and it prevents pitting.

I do not pretend for one moment to say that I offer a new idea to the profession. I only wish to say, that, having tried all modes of treatment recommended, I am satisfied, after much experience in treating both rich and poor, to abandon them all in favour of puncturing with the needle and solution of nitrate of silver at the time indicated.—*Med. Times and Gazette, May 23, 1863, p. 545.*

77.—ON NITRATE OF SILVER TO PREVENT THE PITTING OF SMALL-POX.

By John Higginbottom, Esq., Nottingham.

Having observed, many years ago, that the nitrate of silver had been used on the Continent by MM. Velpeau, Bretonneau, and Serres for the purpose of preventing pits and scars consequent on small-pox, I was induced to apply it as they directed, by puncturing the centre of each vesicle with a needle, and then applying the solid stick of the nitrate of silver. I found it effectual in preventing any further progress of the pox.

The next patient on whom I used the nitrate of silver was a strong, healthy young man, about twenty years of age, with confluent small-pox. I punctured a few of the vesicles on the

face, but these being very numerous, I satisfied myself with applying the concentrated solution over the whole surface of the face, where they were most confluent, without making any punctures. The solution answered as well as where the punctures had been made in arresting the progress of the eruption. The next case of confluent small-pox was one where no punctures were made,—Mr. P., a young man, nineteen years of age, and of delicate constitution. From the confluent state of the pox I should have expected deep pits and scars on his face. I applied the concentrated solution on the whole of the face and the ears in the same manner as recommended in erysipelas.

The vesicles of the pox were immediately arrested in their progress, and in four days presented small hardened eschars, free from inflammation, whilst the pustules on the body were gradually proceeding to suppuration. In about nine days the eschar had come away from the face without leaving pits. In this case the nitrate of silver not only prevented the pits, but the inflammation, irritation, and offensive suppuration which are so distressing to the patient. If thought necessary, the nitrate of silver might be applied all over the scalp, as in erysipelas, to prevent cerebral inflammation. It might be applied on and within the cavity of the ear to prevent otitis, and on the conjunctiva to prevent ophthalmia. I have used as a gargle to the throat in small-pox, with great benefit, a solution of a scruple of nitrate of silver in three ounces of distilled water.

For the remedy to be successful in preventing pitting, it should be applied on the fourth or fifth day of the eruption. The concentrated solution being used, composed of the old stick nitrate of silver, four scruples, to four drachms of distilled water.—*Med. Times and Gazette, July* 11, 1863, *p.* 54.

DISEASES OF THE EYE AND EAR.

58.—ON THE OPERATION OF ABSCISSION IN STAPHYLOMA.

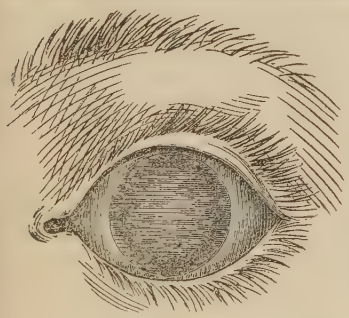
By G. Critchett, Esq., Surgeon to the Royal Ophthalmic Hospital, Moorfields.

[The object of the present paper is to describe a method of operating for staphyloma, which the author has adopted during the last two years, and which seems to possess some advantages over the various plans that have been hitherto recommended.]

The cases to which I am more especially anxious to direct attention in this paper are those to which the term of staphyloma has been more commonly applied, and in which the entire globe of the eye may be said to be implicated to a greater or less extent. Usually all perception of light is lost. Even where

this remains, all possibility of recovering the slightest useful vision is gone.

The size, appearance, pathological conditions, and causes, are exceedingly varied. Perhaps scarcely any two cases are perfectly alike. Sometimes the morbid change is limited to the cornea, which having been destroyed either by ulceration or sloughing, its place is supplied by a membrane, which somewhat resembles that tissue in its appearance, and which, possessing a less degree of resistance, gradually gives way to the pressure from within, and bulges and enlarges. Sometimes it presents a dense white mass, which rises into a prominent conspicuous conical projection, the apex of which is not unfrequently thin and semi-transparent, as if an abortive and imperfect effort had been made by nature to form something resembling a pupil. Sometimes it forms a more uniformly round or globular prominence. Sometimes these projections attain a considerable thickness, probably an effort of nature to re-establist the balance between the internal pressure and the external resistance; as I have before suggested, this tissue is found on examination to be made up of an interlaced fibrous structure, without any trace of true cornea. This is, however, by no means invariably the case. I have met with cases in which a central penetrating ulcer of the cornea (particularly in infants, and as the result of purulent ophthalmia), has been followed by a large staphyloma, a considerable portion of which was made up of true cornea. In many of these cases the projection is limited to the area of the cornea, and does not involve the rest of the globe, which preserves its normal size and tension. The iris is often blended with its posterior surface and the lens is in contact with it also. Or again, I have found a considerable quantity of aqueous fluid filling up the interior of the staphylomatous projection. These various forms, having attained a certain size, will remain stationary, others will manifest a tendency to increase. They are invariably the result of disease limited to the anterior part of the eye—the cornea, iris, and lens—not involving the ciliary region. When, however, the anterior or corneal staphyloma has attained considerable size, I have observed that the sclerotic region will likewise expand, and seem to become secondarily involved in the hyper-



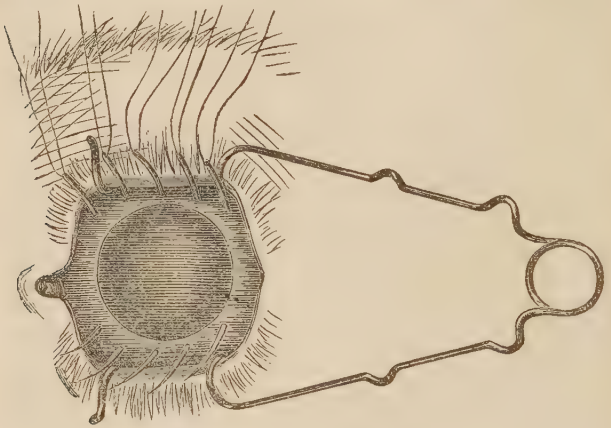
trophy. Instead of the dense white opaque form of anterior staphyloma, it sometimes presents a dark blue or black appearance. It covers a larger area, is more perfectly round and expanded, and is softer and thinner than the previous form. It has a tendency to almost indefinite, though gradual enlargement. In other cases we find the tendency to staphyloma limited to the ciliary region. The cornea, iris, and lens are thus advanced to a considerable extent, without producing any marked change in these structures, but only a very decided increase in the antero-posterior measurements. This is possible to a very considerable degree without any serious or extensive impairment of vision, although in many such cases there is closed pupil and capsular cataract, &c. In another and a large group of cases, the entire globe of the eye is implicated in the enlargement. There may be a uniform enlargement of the entire tunics, both anterior and posterior, or there may be a general enlargement, with irregular bulgings in various parts. In this way a staphyloma sometimes attains a very considerable size, in certain parts it becomes exceedingly thin, and in some instances it suppurates, and breaks like an abscess. In others it may give way and evacuate its aqueous contents; or, having attained a certain size, it may remain stationary. In considering the question of operating, there is an important distinction to be made between those cases where the disease is chiefly limited to the anterior part of the eye, and those in which it has originated in the posterior part and in the deep textures. In the latter the vessels are often enlarged and weakened, and prone to give way when support is taken from them, producing protracted hemorrhage.

It will be generally admitted that in all cases of complete staphyloma, some operative proceeding is called for. The deformity is usually considerable, and is liable to increase; the part is in a morbid condition, often inflamed and irritable, and exerting an unfavourable influence upon the other eye. Whether it remain in a quiet state, or pass through a series of changes, it becomes desirable to operate. We may now consider what are the conditions that we wish to bring about by the operation.

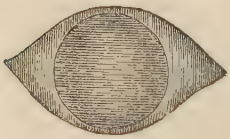
The object we have in view is to reduce the staphyloma to a firm, elastic bulb, that shall be fully influenced by the various muscles, and shall be about a third less in size, or at any rate, in its antero-posterior measurement, than the normal eye, this condition being the most favourable for the employment of an artificial eye. Various methods have been employed with a view to obtain this result, that which has been most commonly employed up to the present time both in this country and on the continent, has been to cut away the anterior part of the

staphyloma with an ordinary Beer's knife, so as to open into the vitreous chamber. Some slight modifications have been introduced by various operators, some removing only a small portion, others taking away the anterior third, or even half of the staphyloma. Some have introduced a needle previously, so as to allow some of the contents of the globe to escape previous to abscission. Those who have had an opportunity of extensively testing this method of proceeding, have become aware of several serious inconveniences. It not unfrequently happens, that a gush of vitreous humour follows the removal of the anterior supports, and subsequently the enlarged and diseased vessels give way, and continue to bleed for several hours, distending the surrounding parts, causing considerable pain, and ultimately suppuration. This untoward result may follow immediately upon the operation, or a few hours or even days after, or in cases where hemorrhage does not occur, suppuration may occur attended with considerable reaction, and constitutional disturbance. Under either of these contingencies, the globe is apt to shrivel up into a small compass, with very slight movement, and imperfect adaptation for an artificial eye. This shrunken globe occasionally becomes hard and painful, and irritates the companion eye. In other cases where no hemorrhage occurs, and no suppuration follows, the sclerotic opening remains in a patent state with the vitreous humour or the lens presented. Repair, is, under these circumstances, difficult, tedious, and uncertain. The membrane that is formed is not unfrequently elastic, and by yielding to the pressure within, bulges, and constitutes a fresh staphyloma, or forms an unstable and irritable basis whereon to rest an artificial eye. Such are the objections to the methods of operating ordinarily employed for the reduction of a staphyloma, and they lead us in the next place to the consideration of the results we are desirous of obtaining, of the accidents we wish to avoid, and the method proposed for their avoidance. In reducing a staphyloma, the aim and object is to form a dense, fibrous, elastic, moveable bulb, filled with fluid, flattened upon its anterior surface, and of such a size as admits the ready adjustment of an artificial eye, and its free movement. In carrying out this object, it is important to mark the size and form of the piece to be removed, to allow of some slight escape of the contents of the eye, so as to avoid a sudden gush, to keep up some support during the operation, and subsequently to place the parts in a favourable condition for supporting the vessels, keeping up pressure, and uniting by the first intention. I will now endeavour to describe the method by which these various objects are intended to be carried out. The patient being placed under the influence of chloroform, the staphyloma is freely exposed by means of a wire speculum, a

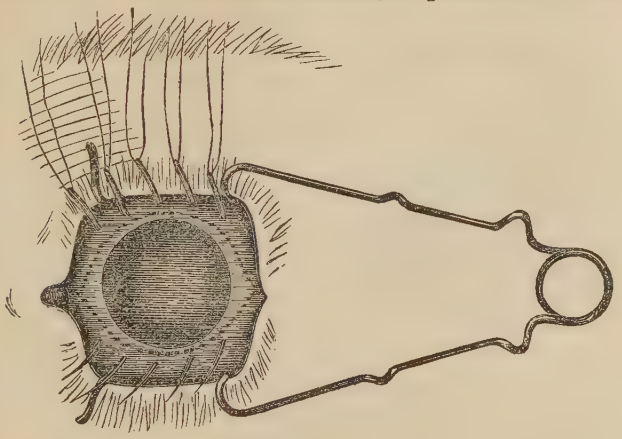
series of four or five rather small needles, with a semi-circular curve, are passed through the mass about equi-distant from each other, and at such points as the lines of incision are intended to traverse. The needles are left in this position with



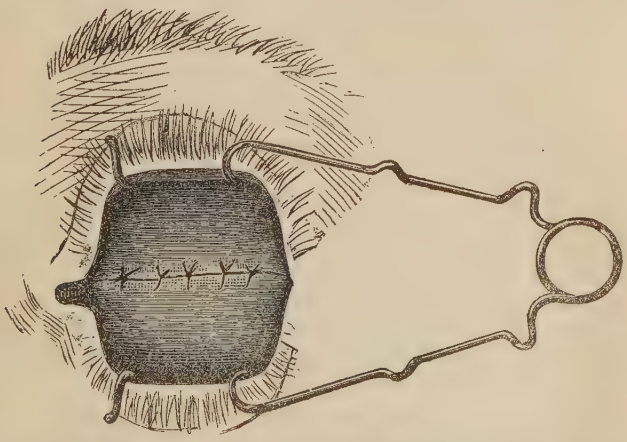
both extremities protruding, to an equal extent, from the staphyloma. The advantages gained by this part of the proceeding are:—1st, that a small quantity of the fluid parts of the distended globe escapes, thus diminishing pressure, and preventing a sudden gush of the contents when the anterior part is removed. 2ndly, that the points of emergence indicate the lines of incision. 3rdly, that the presence of the needles prevents, or rather restrains, to some extent, the escape of the lens and vitreous humour, after the anterior part of the staphyloma has been removed. The next stage of the proceeding is to remove the anterior part of the staphyloma. This requires some judgment and modification in size and form, in accordance with the extent of the enlargement, so as to leave a convenient bulb. My usual plan is to make an opening in the sclerotic, about two lines in extent, just anterior to the tendinous insertion of the external rectus muscle with a Beer's khife. Into this opening I insert a pair of small probe-pointed scissors, and cut out an eliptical piece, just within the points where the needles have entered and emerged. The needles, armed with fine black silk, are



then drawn through each in its turn, and the sutures are carefully tied so as to aproximate as closely as possible the divided



edges of the sclerotic and conjunctiva. The operation is now finished; the speculum may be removed so as to allow the lids



to close, and wet lint may be applied to keep the parts cool. In a large majority of cases, union of the divided edges takes place by the first intention. The operation has been performed by myself

and by my colleagues at Moorfields Hospital, in about thirty cases, and suppuration only occurred in four cases. I generally leave the sutures in for some weeks. Sometimes they come away spontaneously, and when that is not the case, they may readily be removed after all irritation has passed away, and after firm union has taken place. If the case be examined three or four months after the operation, a moveable bulb is seen with a flattened anterior surface, traversed by a transverse white line of cicatrix, and having rather a prominent external angle. Upon this an artificial eye can be readily adapted, which moves to a greater extent than I have observed previous to the adoption of my present plan.—*Ophthalmic Hospital Reports, Vol.* IV., 1863, *p.* 1.

59.—FORCEPS TO FIX THE GLOBE IN ANY OPERATION ON THE EYE.

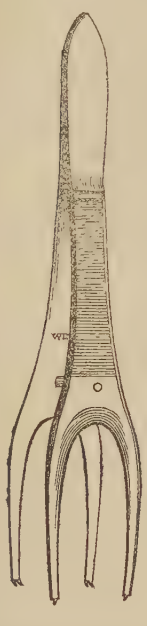
By J. F. Streatfeild, Esq., Assistant-Surgeon to the Royal London Ophthalmic Hospital, and to the Eye Infirmary of University College Hospital, &c.

The suggestion I am about to make under this head is due to a difficulty often to be met with in our operations.

If the eye is held by a single point of conjunctiva, the eyeball may have two different kinds of motion, in consequence of the laxity of the tissues held. In the first place, wherever the eye may be held, it has a considerable degree of motion from side to side of that point. In the second place it may rotate round the point of conjunctiva as a centre. The first objection is that which I had found in practice; the second occurs to my mind only in theory. Both of these objections are remedied by holding the conjunctiva at *two points, one on either side of the globe.*

The forceps is commonly used at Moorfields to steady the eye. I had found before this time the danger threatened by the partial and, in some directions, extensive movements allowed in its use, two opposite recti, at least, being more or less free to act. In devising the instrument I wish to bring into notice,

as a means of *completely* fixing the globe, I kept to the idea of forceps, which practically seems to be best, and sought to acquire *two opposite fixed points.*



In short, I have had forceps made with double ends, to each blade two points five-eighths of an inch apart. (The woodcut represents the forceps one-third less than its real size.) Each end or point of one blade has a little tooth which fits between two others on one of the two ends of the opposite blade. These teeth not only project towards each other, but a little downwards, so that, in use, the toothed projections come first into contact with the conjunctiva. The upper end of the instrument is like the common forceps. The middle of each blade is made rough externally, as usual, that the instrument may be held firmly. Mr. Weiss, the maker, has introduced a *stop guide*, that is to say, a guide with a shoulder, so that by one contrivance the two purposes are gained. The guide projecting at right angles from the inside of one blade enters the hole into which it fits in the other blade, when the two are approximated, and the blades cannot be brought together more than they should be, because of the stop made by the shoulder of the lower, thicker part of the guide itself. The total length of the forceps is four inches and five-eighths. The blades are much widened below their middle, and each blade has a U shaped extremity, an inch and two-eighths in depth, the space between the two branches of the blade being of the breadth of the distance apart ($\frac{3}{8}$ in.) of the points, even to the bottom of the U shaped interval, the place of divergence of the double end of each blade. I think it important that this interval should be so deep and wide, if it were V shaped the instrument would be more elegant but less practical, for without a wide space between the points of the forceps light is not so well admitted, and any instrument that may be wanted is used less conveniently.

The distance between the ends of each blade of the forceps I made somewhat greater than the breadth of an average cornea, so much so that my forceps may seize conjunctiva and, which is important, the sub-conjunctival tissue, at that distance from the margin of the cornea on two opposite sides, which seems to

afford the best hold and command of the eye, according to experience of ordinary forceps. Sometimes in using the new forceps I have rested the hand in which it is held on the forehead of the patient, and, as I stand behind the head of the patient, who is supposed to be lying down, I have then operated *below* the forceps. At other times I have rested my hand, holding the forceps, on the patient's cheek, and done the operation *above* the instrument. The points at which the conjunctiva, &c., is seized, of course, need not always be in the line of the palpebral aperture, they may be above and below or at any other two opposite points around the cornea. I have found the instrument answer its purpose well; with it I have *complete* command of the globe, and I know of no real inconvenience or difficulty in its use or after ill result. If it is more difficult to seize a little fold of conjunctiva, &c., at two points at once, than at one only, it is soon done easily, and it is worth trying. At first an unnecessarily large fold is taken up by one or both ends of the closed blades.

I need not stay to examine the general principles on which *common* forceps has been preferred to other means of fixing the eye. It exerts no compression of the globe. It does not only prevent the movements of the eye in one direction, but in two, and partly in more than two, directions. Still it does not prevent all the movements of the globe. The most recent English writer on this subject (Mr. France, "Guy's Hospital Reports," 1858, pp. 81—102) says he finds artery forceps hold "the eye perfectly still and motionless, or as nearly so as possible." With double-ended forceps it will be found possible to fix the eye as completely as can be desired, and that without any reservation. Indeed, the command which Mr. France acquired over the patient's eye was not only, at any rate in extraction, gained by the forceps he used, but by supplementing its firm hold with *two other points* at which the globe was steadied. He says (p. 93), "I place my fore and middle fingers on the globe in the usual way, and thus perfect the command of the organ." Whilst operating he gave up the forceps to an assistant, but even if this could always be done, two fingers of the operator's hand could not, in all operations, be used to steady the globe, nor does he say that the two fingers are always thus to be used.

Mr. France, of course, does not believe that any important injury can be done to the conjunctiva by the forceps. To this I would add that, if the conjunctiva becomes torn, or is necessarily compressed very much, in using ordinary forceps, it is not so likely to tear, nor need the conjunctiva be so firmly compressed when a double forceps is used, because the strain of the attempted movements of the eye is halved and equalized. Forceps with teeth certainly give a good hold of the conjunctiva,

and I do not know that it does more injury than is done by the firmer compression required when the broad ends of forceps without teeth are used. It is not absolutely necessary that the line between the two points at which the eye is steadied by my forceps should be through the centre of the cornea, so that it can be used in extraction, when a large section of the cornea is required, or in any operation. Mr. France has a paper "On the use of Forceps in Extraction of Cataract" in this Journal (Vol 2, pp. 20—25), in which its advantages are shown; and he is followed in this by Mr. Poland (Vol. III, pp. 268—270).—*Ophthalmic Hospital Reports, Vol.* IV., 1863, *p.* 100.

60.—VASCULAR CORNEA AND GRANULAR LIDS—ONE EYE TREATED BY INOCULATION, THE OTHER BY PERITOMY.

Under the care of George Lawson, Esq., Moorfields Ophthalmic Hospital.

E. R., aged nineteen, was admitted into the Ophthalmic Hospital on the 5th July, in the following condition :—

Both lids were extremely granular—the granulations being large and fleshy. Both corneæ were completely vascular and villous, presenting quite a velvetty appearance ; no portion of clear healthy cornea remained. She was able to see her way about, but could not discern features or count fingers with either eye, at the time of her admission. She had been long under treatment elsewhere, but so far from improving, says that lately she had been getting decidedly worse. Her left eye, she thinks, is the worst. On this account the left eye was selected for inoculation, and some pus, from the eye of a child suffering from severe purulent ophthalmia, was introduced between the lids. This was speedily followed by intense inflammation, great pain, and swelling of the lids, accompanied by a copious discharge of pus. She was kept in the hospital, allowed to walk about the ward, and maintained on a good diet, but the action induced by the inoculation was left to run its course, and on the 17th of the month, when the activity of the inflammation had greatly subsided, she was made an out-patient, but there was still a free discharge from the lids and the surface of the eye. She has regularly attended the hospital, and the condition of the eye continues to improve. The last report is on—

October 26th. The granulations of the lids have disappeared, and a smooth surface is seen. The cornea is bright and transparent, although certainly not so clear as a perfectly healthy one,

which had never suffered from disease. To the eye it appears non-vascular. She is able to read No. 6 of Jaeger's test types, and in a few months' time will probably be able to read No. 4 or No. 2.

On the 10th of October she was readmitted for the treatment of the right eye. Since her left eye had been treated, her right had continued to get worse, and now with it, she had little more than a mere perception of light. She was unable to recognise features or to count fingers, or, unaided by the left eye, to see her way about.

In this eye peritomy was performed, and a piece of conjunctiva, $\frac{1}{8}$th of an inch in width, was removed from around the entire circumference of the cornea—care being taken to cut it away close to the corneal edge, and at the same time to dissect off all the sub-conjunctival tissue, which corresponded to the piece of conjunctiva removed.

This proceeding was followed by a considerable amount of pain and a free suppurative inflammation. The lids were puffy, the eye very irritable to light, and there was a moderate discharge of thin semi-purulent matter from between the lids. The conjunctiva was much chemosed. These acute symptoms soon subsided, and in about ten days she was able to leave the hospital and become an out-patient, but a subacute conjunctivitis remained, and a free discharge of semi-purulent fluid continued to flow. The eye appeared almost as if it were recovering from inoculation. She has been seen at regular intervals since the operation, and no treatment has been adopted to check the discharge from the conjunctival surface of the lids and eye-ball.

December 4th. The discharge still continues to some extent. The sight is decidedly improved. She is just able to count fingers, but, until the present state of irritability has entirely subsided, it is not fair to say what benefit she has derived from the operation. In this patient peritomy produced more acute symptoms than I have ever seen in others on whom it has been performed, but the case was a severe one. The conjunctiva was thick and almost velvetty, and the sub-conjunctival tissue very abundant, and, as a consequence, the action which followed was excessive.

In a case so severe as this one, inoculation by purulent matter is a far more efficient, and, I think, an equally safe proceeding. It is in the milder forms of vascular corneæ, where inoculation cannot be judiciously advised, that peritomy may be of service.—*Ophthalmic Hospital Reports, Vol.* IV., 1863, *p.* 64.

61.—ON SYNDECTOMY.

By Dr. C. Bader, Assistant Ophthalmic Surgeon Guy's Hospital, and Curator to the Royal London Ophthalmic Hospital.

The term syndectomy is applied to an operation, which consists in the removal of a large zone of conjunctiva and subconjunctival tissue from around the cornea for the relief or cure of pannus and other lesions of the cornea.

The operation was introduced by Dr. Furnari, of Paris. An account of it is given in the Gazette Medicale, 1862.

"The requisite instruments (made by Mathieu, of Paris) consists," he says, "of: 1. A forceps à griffes multiples: 2. A pair of blunt-pointed scissors curved on the flat; one of the rings of which has a contrivance for holding a sponge: 3. A small blunt-pointed hook, the concavity of which is sharp, with which to cut through vessels which have been hooked up: and 4. A small scarifier.

"The patient sits during the operation, and the eyelids are kept apart with a speculum. Commencing his incision near the outer canthus, Dr. Furnari excises a broad ring of the ocular conjunctiva, extending from the margin of the cornea to within three millimeters (about an eighth of an inch) of the line where the conjunctiva is reflected from the globe to the inner surface of the eyelids. Symblepharon might ensue if more was taken away. For the purpose of fixing and turning the eyeball during the operation, a flap of conjunctiva is left at the upper margin of the cornea; this is removed last. The subconjunctival tissue must be carefully dissected off, so as to expose the surface of the sclera. No trace of cellular tissue or of blood-vessels should be left; any which escape the scissors are to be caught up and cut with the sharp hook. The vessels upon the cornea are freely scarified; and their ends, if projecting, cut off with scissors.

"After the bleeding has somewhat subsided, the exposed sclera and ulcerating portions of the cornea are touched with caustic, the vascular only slightly, and the transparent portions not at all.

"The caustic, nitrate of silver, is applied with a brush which has been just before rubbed upon the solid stick. Too strong cauterisation may leave corneal opacities, whilst too slight causes an insufficient exfoliation of the corneal epithelium, and allows the formation of fresh vascular webs. Local application of cold forms the after treatment. A strong irritation, but no inflammation, follows the operation; the abundant local bleeding seems to act antiphlogistically.

"The pain, photophobia, and lacrymation cease twenty-four hours after the operation. The elimination of the corneal

epithelium commences a week later; the blood-vessels upon the cornea atrophy, the infiltrated blood, and lymph become absorbed: the pannous covering of the cornea exfoliates, and the transparent cornea appears three or four days after the operation: a thick plastic material covers the exposed sclera; a week later a conjunctival margin is again observed along the cornea; the other margin of the conjunctival wound, slightly swollen and granular, is advancing towards the cornea. In from one to two months all trace of a loss of the conjunctiva has disappeared; the new tissue possesses the charateristics of conjunctiva, and the functions of the eye are not impaired. Any blood-vessels which may have reappeared upon the surface of the cornea are to be excised, scarified, and touched with caustic. Dr. Furnari thinks that the vascular state of the cornea is either produced by the granular state of the palpebral conjunctiva, or by an over-vascularity and thickening of the conjunctiva." The operation is indicated, according to him: "1. In the membranous and fleshy pannus; 2. In phlebectasiae of the conjunctiva and cornea; 3. In simple vascular keratoïditis; 4. In partial vascularities of the cornea; 5. In interlamellar infiltrations of blood or lymph; 6. In corneal lesions resulting from entropium, ectropium, and trichiasis; 7. In staphylomatous conditions of the cornea, consecutive to softening of the latter."

I have myself performed syndectomy in twenty-four cases of vascular cornea, some with, others without, granular lids. Chloroform was given in most cases; the great pain, the bleeding, and the straining of the patient render the operation more tedious when performed without chloroform. The operator stands behind the patient, who is recumbent. A spring speculum is used to keep the eyelids open. The incision through the conjunctiva, made with blunt-pointed (strabismus) scissors, is (the cornea occupying the middle of the palpebral aperture) commenced close to the outer canthus in the right and close to the semi-lunar fold in the left eye, and is carried through in a circle parallel with the margin of the cornea. The conjunctiva, together with as much of the subconjunctival tissue as can be seized, is then dissected off towards the margin of the cornea, where its attachment is lastly severed. Two small portions of conjunctiva near the upper and lower margin of the cornea, which had been spared for the purpose of rotating and fixing the eye, are removed last. Particular care must be taken to cut and tear off all blood-vessels and the cellular tissue, from the part of the sclera situated between the insertion of the tendons of the recti muscles and the margin of the cornea. A small sponge is held in the hand which carries the scissors, so as to sponge small vascular spots quickly.

As many blood-vessels and as much of the fleshy (pannous) tissue as can be removed from the surface of the cornea, without impairing its lamellated tissue should be taken away, and free scarifications of the blood-vessels upon the latter, and abrasion of the scarified portions conclude the operation. Simple water dressing constitutes the after treatment. Most of my cases were treated as out-patients. In cases where the eyelids were granular, on the third day after the operation, instillations were ordered of a solution of sulphate of copper (gr. ii ad ℥j). The changes of the surface of the cornea after the operation, appear to contribute much towards the cure of the granulations of the lid; they seemed to decrease in size and number more rapidly than they would otherwise have done.—*Ophthalmic Hospital Reports, Vol.* IV., 1863, *p.* 19.

62.—ON A NEW METHOD OF OPERATING IN STRABISMUS.

By Dr. Armstrong Todd, A.B.

[Dr. Todd during the last seven years has operated on about five-and-thirty cases of strabismus according to a method which differs considerably from that usually employed. He has never been able to discover afterwards the least trace of an operation having been performed.]

The operation consists in making a horizontal incision in the conjunctiva high up under the upper lid, and then a subconjunctival division of the tendon.

By this means the upper lid completely covers the incision in the conjunctiva, excludes the air from the divided extremities of the tendon, while its action as a constant lubricator with the tears encourages healing by the first intention.

It has been said that the same advantages are gained by operating from below under the lower lid, and that there is less difficulty in doing so; but the after appearance is much better from the superior operation than from the inferior; the folds of conjunctiva as they pass from the caruncula to the superior and inferior lids differ considerably. The former makes a blunt *cul-de-sac* in the inner canthus, and the latter forms the plica semi-lunaris which gracefully curves downwards and forwards, terminating at the lower extremity of the perpendicular diameter of the cornea. This must be interfered with in the lower operation, and the result is a shrinking and retraction of the caruncula, giving sometimes the appearance of a slight external squint when the eye may be perfectly straight. I have not known this to happen in the slightest degree from the

upper operation. This retraction of the caruncula is the invariable result of the mode first adopted of cutting the conjunctiva a little to the inner edge of the cornea and then coming down direct upon the tendon. This proceeding has another great defect; it admits the air to the cut surfaces of the tendon, and in consequence I have frequently seen suppuration and large growths of granulations which become very troublesome and add considerably to the after deformity. This never happens after the operation described below.

The following is the mode of proceeding:—The wire speculum having been introduced between the lids, the conjunctiva of the upper and inner angle, as it reflects from the posterior surface of the lid upon the eye-ball, is seized with a fine claw forceps and drawn downwards and forwards, then with a curved scissors a horizontal incision is made about a quarter of an inch or three-eighths long, then with another fine claw forceps the areolar tissue and sub-conjunctival membrane are drawn out through the first opening, the forceps still holding the conjunctiva, which may now be released, and the scissors again taken to divide these tissues down to the sclerotic, a small curved director is then introduced and directed at first towards the back of the eye and then drawn forwards and downwards so as to pass between the muscle and the eye-ball. This is readily accomplished and the tendon can be felt, and sometimes seen lying upon the director. A small curved bistoury is then passed down the groove, and with the act of withdrawing is made to divide the tendon, the point being seen as it passes upwards behind the conjunctiva, which must be carefully preserved from being cut; the director is then removed with its point pressing against the back of the conjunctiva, and will show if the muscle be completely divided.

This operation may appear to be very difficult and somewhat dangerous, but such is by no means the case. I have never had any accident nor experienced any difficulty.

It is curious how many different opinions have been advanced upon the real nature and cause of the ordinary internal strabismus. Of course there are various forms of the deformity depending upon known causes, such as paralysis, specks upon the cornea, &c., but I have never heard any real explanation of the ordinary internal strabismus which one so commonly sees. It is very rarely, if ever, congenital, and frequently it comes on suddenly at an early age after some derangement of the system, such as infantile convulsions. Now, is it a regular contraction of the internal rectus muscle? This is proved not to be the case by a simple experiment. If the hand be placed over what appears to be the straight eye an immediate change of circum-

stances takes place, the deformed eye becomes straight and the other takes its place in the analogous position of deformity; it stands to reason, then, that there can be no permanent deformity in the internal rectus muscle. The same experiment and result fully proves that the central portion of the retina, its most sensitive part, cannot be defective, or, at any rate, that the eye is not turned inwards for the purpose of presenting a more sensitive portion to the rays of light, because, on excluding the light from the other eye, the squinting one immediately calls into play this very portion, proving that it is still the more sensitive.

It has for a long time been my believe that this deformity is not a muscular affection, nor one of the retina, nor paralysis of any kind, but chiefly due to disordered action of the sympathetic nerves; in fact there is no disease, but a simple accident remaining after some severe temporary derangement of the entire nervous system. The eyes which were accustomed to act uniformly in parallelism now act as uniformly in convergence. The governing power having been for a time suspended by the derangement of the nervous system (convulsions in children, derangement of the stomach, &c.), accidental convergence takes place, and when this governing power is restored, the muscles of the eye act uniformly as before, but instead of the axes being parallel, they continue to converge and remain in that convergent position.

According to this theory, one cannot believe in a single squint, and this I have seen illustrated by some cases on which I have operated. My idea is that both eyes really converge equally, but this impairing vision, the weaker of the two gives way to the the stronger and turns still more inwards to allow of the other becoming straight. Thus, having operated after the above plan upon one eye, so little damage is done to the tendon by the simple division with the bistoury, I have frequently seen that only half the cure was effected; and upon division of the tendon of the other eye, the axes become parallel.

In consequence of this I almost invariably operate upon both eyes. I do not think that when the tendon is divided it attaches itself to a portion of the eye-ball further back, as I have heard some assert, but the good is effected by the suspension of nerve action upon those muscles, permitting of parallelism being restored, and then the cut surfaces of the tendons are united in other operations, and the eyes are again worked in parallelism.—*London Medical Review, May* 1863, *p.* 576.

63.—ON THE TREATMENT OF STRABISMUS AT THE ROYAL LONDON OPHTHALMIC HOSPITAL.

By George Lawson, Esq., Assistant-Surgeon to the Moorfields Hospital, and to the Middlesex Hospital.

It has been stated that some of the objections to the subconjunctival operation are, that the plica semilunaris is interfered with, and that the result is a shrinking and retraction of the caruncle. Again, it is urged that suppuration and large growths of granulations follow the operation, and add considerably to the after deformity.

To such statements I can only say that the writer of them either could never have seen the subconjunctival operation properly performed, or else must have witnessed results very different from those which are obtained at Moorfields.

I would preface the remarks I have to make on this operation by stating that the plica semilunaris ought never to be interfered with; that the falling back of the caruncle is an exceedingly rare occurrence after the operation, and cannot follow it unless improperly performed; and that suppuration of the wound and the after formation of granulations in the site of the cut in the conjunctiva never occur.

I will now briefly describe the operation as performed at Moorfields.

The lids are kept apart by the ordinary wire speculum. The surgeon then makes a small opening in the conjunctiva with scissors over the lower edge of the insertion of the rectus tendon, taking hold of the membrane, and often of the deep fascia at the same time, with the forceps, which, if the eye be turned inwards, may be slided (closed) along the surface from the edge of the cornea till they reach the proper spot for the opening; thus the eye need not be held by an assistant. The fascia being opened, the lower edge of the tendon is exposed *close to its insertion.* If the fascia has not been opened at the first snip, it is in its turn seized by the forceps at the same point and divided, without interference with any other structure; the object being simply to divide the tendon on the ocular side of the hook *at its insertion.* The blunt hook is now passed through the aperture in the subconjunctival fascia, and behind the tendon, which it renders tense by being made to draw on it slightly forwards and outwards. The next step is the introduction of the scissors. Mr. Bowman insists on the propriety of carefully introducing the points of the scissors, not much separated—one along the hook behind the tendon, the other in front of the tendon, and between it and the conjunctiva, and of dividing the tendon by *successive snips* from the

lower to the upper edge. If the tendon is divided by one cut the operation is more roughly executed, for, as the blades have to be opened more widely, the opening in the conjunctiva and fascia must be larger; vessels of a larger size may be divided, and the tendon may be pushed off the hook before the points of the scissors: if this happen, of course the hook must be reintroduced. The surgeon completes the operation by making a small counter-puncture, by bulging the conjunctiva on the end of the hook in the situation of the upper border of the tendon after its division, and by then snipping it with the scissors; the object being to allow any of the effused blood immediately to escape, instead of diffusing itself over the sclerotic. The subsequent ecchymosis then never need extend beyond the seat of the operation, and should disappear within a few days.

The results of this operation, when properly performed, are so satisfactory that I feel any new method must possess very strong claims to justify its preference.

Before operating on a patient for strabismus, the visual condition of the two eyes is to be ascertained, and the relative strength of the internal and external recti muscles made out. Mr. Bowman is very decided in urging the necessity of carefully estimating the comparative strength of these muscles in both eyes, as according to their relative power he determines upon the necessity of operating on one or both eyes. He has adopted a set of symbols which indicate accurately their comparative state. The patient is made to look at a near object held at the extreme outer limit of his field of vision, first on one side, then on the other, and the extreme limit of movement of each eye inwards and outwards is then noted, with reference respectively to the lower punctum and the outer canthus; the pupil being the part of the eye used to mark the movement inwards; the outer edge of the cornea the movement outwards. In noting the case on paper, the diagrams of the positions of the two eyes should be placed on the same line, as if facing the observer; that of the right eye on the left hand side.

In each case the exact distance admits of being recorded. In this manner the relative strength of the internal and external recti of the two eyes may be estimated, and the result marked down in a single line, so as to show at a glance in which eye the preponderance of power of either muscle exists. After the operation another examination is made, and the result again marked down. We are thus enabled accurately to record on paper the amount of power the one muscle has gained and the loss the other has sustained by the operation, and this at successive periods in the history of each case.—*Lancet, July* 4, 1863, *p.* 8.

64.—ON STRICTURE OF THE LACHRYMAL DUCT.

By Haynes Walton, Esq., Surgeon to the Central London Ophthalmic Hospital.

[In the great mass of these cases we have evidence of a feeble bodily condition, or of struma; in fact, obstruction of the duct is of itself a strong mark of such a diathesis. The wet corner of the eye, the soppy eye-lashes, the redness and swelling of the integuments generally present much obscurity in the diagnosis. When there is doubt—because any of these symptoms are less marked—the effect of pressure with the finger on the sac upwards, will be a sure guide. There is only one possible source of error, and this arises out of an obstructed puncture, because occlusion of the lower one causes effects similar to the early stage of a diseased duct, and the pressure test would fail. With the slightest doubt, therefore, the punctum should be well examined.]

A strictured duct requires to be mechanically treated, and as there is a morbid state of the canal, by which an accumulation of the secretion it causes merely interrupts the free passage of the tears, and which state may be remedied by constitutional and topical measures; and as there may be stricture with but faintly apparent morbid action, and with little or scarcely any escape of new products or accumulation, when the sac is pressed, it often becomes a nice matter to diagnose between them. For many years I have sought for the indication in question; and now I rely on two simple facts as the most sure and unerring guides. These are the state of the canaliculi, and the condition of the parts about the lachrymal sac as conveyed to the touch.

When one of the canaliculi, especially the lower, is choked at the inner end, there is, as far as I have observed, almost invariably, stricture of the duct as well. Again, when there is decided thickening of the parts over and about the lachrymal sac, so that the edges of the bones cannot be felt as in health, there is that condition that needs dilatation. These rules have fewer exceptions than any that I know of. A profuse discharge, even of purulent matter, through the puncta, generally associated with stricture, is not in itself, as I have frequently ascertained by actual exploration, an unerring sign of obstruction. On the other hand, all degrees of narrowing of the duct, and even complete occlusion, may exist, without the escape of pus, and but little of any secretion.

It is the chief object of this lecture to show how to effect the process of dilatation in a strictured duct, because it demands special teaching.

I am quite satisfied that the mere occasional probing is not in itself sufficient. Besides, it is so tedious and so very disagree-

able that both public and private patients rebel against it. I may add that when there is really that degree of structural change which unequivocally calls for instrumental treatment, the wearing of a style is the less irksome, the more beneficial, and the quicker plan.

It is a great modern improvement to introduce the style through the canalicular entrance into the lachrymal sac, instead of the old plan through the skin on the face. I think that it may always be done, except when there is a lachrymal fistula, especially with necrosis. The method of doing it is this: The lachrymal director is passed into the punctum and along the canaliculus, till the point enters the sac, and rests against the lachrymal bone. With a fine scalpel this canal should be slit up in its whole length, and, as I think, a little of the sac as well. In certain instances, when, for example, a patient cannot be seen as often as I would wish, I introduce the style, if practicable, at once; but generally I effect it by a slower process, dilating the duct by degrees. Primary union is very apt to follow the operation on the canaliculus, in part or in whole, and the new channel should be reopened with the director or probe each day, till no longer required.

I generally explore the duct in the first instance with a tapering steel sound, and then with a small silver wire; and should there be much stricture, and some difficulty in reaching the floor of the nose, I do not withdraw the wire, but cut off the upper part and turn the end down on the eyelid with pliers in the form of a little hook. After a few days, the calibre of the duct is increased, and the style may be more readily introduced. The styles should be made of standard silver. The head should be curved into a hook, or wrought into a little tail, the extremity of which rests just over the eyelid. Several wires should be kept that the lesser might be employed till the largest can be used. Different lengths, too, are needed; for in each application the foot should reach the palatine process of the superior maxillary bone forming the floor of the nose. There is then no risk of the style slipping down; nor of the upper end producing irritation from pressure; nor ulceration, and so forming a false channel to rest on. Messrs. Weiss of the Strand keep all the instruments that I use.

The stricture may prove to be very tight—so dense, indeed, that it cannot be penetrated by the probe or the style. It must then be divided by the style-knife, which ought to be pressed down till the resistance is overcome.

The success of the entire proceedings rests on the accurate passage of the style. Liability to failure consists in the tendency there is to penetrate the lachrymal bone rather than in line of the duct. I know of no more common mistake in

ophthalmic surgery than for a false passage to be made in attempts to open the nasal duct, and to probe it; and the liability is still greater when the canaliculus is made the channel after the manner now described.

I can give no rules for guidence beyond those of acquiring anatomical knowledge of the part, which a single dissection on the dead body will afford; of exercising great care; and never to be satisfied that the right passage is reached, till the probe touches the floor of the nose; when the lachrymal bone is penetrated, the probe is passed into the fauces as far as it may be thrust.

From time to time, the style should be removed and cleaned, and if it should ever become uncomfortable or irritating, the cessation of wear for a day or two generally makes it afterwards tolerable. Some patients wear it at night only. As to the duration of its application, I continue it until all inflammatory action has been subdued, which is indicated by an absence of all purulent or other secretion of an unhealthy nature from the duct.

I can declare that I have obtained an amount of success during the last five years which often astonishes me when I reflect on the nature of the cases treated. In the majority, I have had perfect results. In some, there has been immense amelioration, it being only at times when, perhaps, the conjunctiva is swollen from catarrh, that a little defective working in the excretory channel is felt. In some few, the reintroduction of the style for a few days, or longer, has been needed. In not a single case treated in my private practice have I failed to afford some substantial relief.—*British Med. Journal, April* 4, 1863, *p.* 344.

65.—ON THE USE OF TANNIN IN INFLAMMATORY AFFECTIONS OF THE CONJUNCTIVA.

By Dr. G. R. Sheraton.

[In inflammation the most conspicuous and evidently the most important morbid change is dilatation of the vessels of the part; hence in all tissues to which remedies directly counteracting this change can be applied, such remedies are found to be by far the most successful treatment. The first step is, probably, owing to the nerves supplying the capillaries; but the real damage is done by the effusions resulting from the capillary dilatation.]

Astringents are indicated on theoretical grounds, the *modus operandi* of which upon the living tissues is to a considerable extent mechanical by contracting the fibres and capillary vessels

of the part to which they are applied, by which less fluid is admitted into them. But the astringents ordinarily in use, and derived from the mineral kingdon, are inadmissible during the acute stages, in consequence of the violent irritation they produce if applied directly to the membrane, except in a very ineffectual degree of dilution.

On these grounds, then, I have been led to employ tannin, which is probably one of the most powerful astringents, whilst its comparative freedom from irritation renders it a safe and effectual remedy for a class of cases which I have proposed. The manner which I employ it is in the form of solution of tannin, ℈j.—℈ij. to aq. distil. ℥j.

A small portion of this is dropped into the eye, which at first causes a smarting sensation with a gush of tears, and which is succeeded by a dryness and a feeling of comfort. This is to be repeated three, four, or a dozen times a day as circumstances require. The effect produced is soon made apparent; the distended capillaries seem to become unloaded of their stagnant contents, increased lachrymation and muco-purulent discharge, if present, is checked, the organ becomes more fitted to perform its office, and the dependent constitutional symptoms are mitigated and disappear. I have now treated a great number of cases most satisfactorily in this manner without ever having had occasion to deviate from that course, in the slightest degree, when the result of external causes and unconnected with constitutional diathesis. Though chemosis when present seems to retard the progress somewhat, probably in consequence of the effused fluid for a time preventing its full constrictive influence upon the capillary vessels. Since I have been thoroughly convinced of the utility of tannin as a remedial agent in this class of cases, I have modified the mode of application to suit the exigencies of the various cases, *e.g.*, by its combination with some aqueous extract of a sedative drug, as solution of morphia, belladonna, opium, &c., to relieve the distressing pain, heat, and smarting that always to a greater or less extent accompany this disorder. I have also found it to be extremely useful during the acute stage of strumous, phlyctenular corneitis, removing the vascularity more expeditely than any other remedy that I have hitherto employed, and probably tending to contraction of the resulting ulcer, and by its combination with the aqueous solution of belladonna, &c., soothes and relieves the intolerance of light; though it has usually been my practice to employ the stimulating mode of treatment as soon as the fasciculi of vessels had disappeared. I have also been careful to secure a suitable regimen, and a dose of aperient medicine when such was deemed necessary.—*Medical Times and Gazette, Sept.* 12, 1863, *p.* 272.

66.—PRACTICAL OBSERVATIONS ON THE TREATMENT OF PURULENT OPHTHALMIA IN INFANTS.

By J. C. Wordsworth, Esq., Surgeon to the Royal London Ophthalmic Hospital.

[Numerous instances of the destructive tendency of purulent ophthalmia in infants must come before the notice of all engaged in extensive practice, yet the disease is one usually very amenable to treatment.]

Suppose a case of the disease in which it is confined to redness of the conjunctiva, especially of the lower lid, the mucous membrane being somewhat villous and prominent, and attended by some discharge of mucus or pus, and tears. This is the first stage. How may such be best treated? I should be content to have the eyes bathed frequently with warm water, by means of a small piece of linen cloth, to wash away the discharge; and afterwards, with an astringent lotion, containing four grains of alum in an ounce of water, and then wiped dry, and a little spermaceti ointment smeared on the edge of the lower lid, and the child put back to bed. A tea-spoonful of castor-oil may be given, if it have not already taken some aperient. If in a few days this does not terminate the treatment, I usually drop a solution of two grains of nitrate of silver in an ounce of distilled water on the conjunctiva twice a day. This rarely fails to produce a marked improvement in a few hours, especially if the discharge have become thin; the child opens its eyes and bears the light without inconvenience.

If the case have passed into the second stage—the lids being *red*, swollen, tense, and *shining;* the conjunctiva of the globe swollen, and raised round the cornea; the discharge profuse; and the child being hot, fretful, and restless—I apply a leech to each upper lid, and administer a grain of calomel at once. By means of the leech, the swelling is soon reduced, so that the cornea may be examined; and, independently of the antiphlogistic effect of loss of blood which is thus gained, the application of remedies to the conjunctiva can be more easily effected.

Fomentation of the lid is continued for some time, to encourage bleeding and soothe the inflamed structures. The child will usually be considerably reduced by the bleeding; and, being also relieved of pain, soon falls asleep. If the calomel do not soon open the bowels, a small dose of castor-oil may be given. The fomentation is renewed at short intervals; and, as soon as the case approaches the conditions of the first stage, the weak alum-lotion is substituted for the warm water; and this is again supplemented by the nitrate of silver drop, as this ceases to effect a cure.

I constantly find that the subjects of this affection are immature children of seven or eight months; and that the mothers are feeble and delicate women, incapable of providing a full supply of good milk. Under these circumstances, I prescribe quinine and iron for the mother, and thus indirectly influence the child.

The late Mr. Tyrrell introduced the practice of dividing the chemotic swelling by a series of radiating incisions round the cornea—a practice that since his time has, I believe, fallen into disuse. It is long since I have known it employed; but in his practice it seems to have been so satisfactory, that one could scarcely reconcile the disuse of it with one's duty, if a suitable case were presented. Yet I have no reason to think the practice of his successors at the hospital is less successful than that adopted by this excellent surgeon.

From considerable opportunities, I am persuaded that the plan above sketched is most satisfactory and efficient for the treatment of this important disease. I do not doubt that, if more generally employed, it would conduce to diminish materially, if not to entirely check, the sad and irremediable consequences of purulent ophthalmia. It has also, to my mind, a great advantage over the cruel and unnecessary practice of applying stimulants to the tender and acutely sensitive little patients; and assuredly, in the cause of humanity, we should endeavour to avoid the infliction of an unnecessary pang, especially when we remember how acutely a sympathising mother suffers in witnessing these painful cases; and how heroic she must be, or neglect to apply the painful remedy that has been prescribed, when she sees the agony that its employment causes to her babe. Who can wonder, then, that such painful treatment is not fully carried into effect; and that, consequently, much risk is incurred by the attendants for the sake of saving the child's sufferings? Nor should we forget that the mother's health materially reacts on the child's; and, consequently, how necessary it is that she should be spared these painful emotions.—*British Medical Journal, May* 2, 1863, *p.* 452.

67.—CLINICAL REMARKS ON THE TREATMENT OF PURULENT OPHTHALMIA.

By Ernest Hart, Esq., Ophthalmic Surgeon to St. Mary's Hospital.

This disease is so frequent and the disastrous consequences are so great if unchecked in its progress, that we ourselves always peruse with care any communication on the subject. The greater number of these cases are due to inoculation by blen-

orrhagic matter from the mother; but neither on the one hand does every blenorrhagic mother infect her child, nor, on the other hand does the disease arise in children solely from this cause.]

Mr. Hart fully confirmed the opinion which Dr. Thomas Ballard had lately strongly expressed, that the undue exposure of newly-born infants to strong light was a plentiful cause of the disease. Want of cleanliness was another. Moreover the affection appeared, like other forms of conjunctivitis, to be occasionally almost epidemic. The early symptoms of the disease were well known to all practitioners. A little swelling and redness of the lids externally, and of the conjunctiva internally, with a gumming of their edges, and an escape of a lemon-coloured fluid from between them, consisting of blood-pigment, serosity, and fibrin, diluted with the tears. The swelling and redness increase, and an abundant purulent secretion soon occurs. Sometimes ectropion ensues from the excessive swelling of the palpebral conjunctiva. If the disease be not successfully combated, corneal complications follow: infiltration at the edge of the cornea, and multiple ulcers; then death of the cornea, sloughing and escape of the lens, and staphyloma. This was the history, Mr. Hart observed, which might be deciphered in the blinded and staphylomatous eyes of the child in the Victoria ward. But happily these results might be considered as very rare and unlikely to accrue, if proper treatment were adopted in due time. The disorder usually appeared on the third or fourth day. It was often sufficient at this time, when the lids were just become stiff and congested, to apply a cold lotion, which is very well borne; to see that the eyes were sponged with tepid water (so that a stream ran under the lids) every hour; and to apply to the edge of the lids with a little brush the following ointment, the object of which is to prevent them from sticking together: citrine ointment, one drachm; olive oil, four drachms; lard to an ounce and a half. At the same time a laxative may be administered. When the symptoms are more strongly marked, and the purulent secretion established, more energetic means must be resorted to. The use of an alum lotion (four grains to the ounce) every hour, applied beneath the lids by a small sponge or syringe, is a very useful measure; and Mr. Hart said that in hospital practice, where he could not count upon seeing his little patient brought regularly and sufficiently often, and other attentions were commonly wanting, he had found this treatment by frequent irrigations with alum-water yield better results and more rapidly arrest the disorder than any other. Where, however, the mother will give proper attention, and in all private cases, he employed and strongly advised the application of *dilute caustic points* to the palpebral

conjunctiva, followed by refrigerants externally. The *dilute caustic points* were prepared by melting nitrate of silver into stick with one or two parts of nitrate of potash. He had been furnished with points of different strength by Messrs. Savory and Moore. Thus the degree of cauterization could be graduated at will. It was only necessary to pass the stick over the palpebral conjunctiva. The lid should be everted for the purpose, and a little brush impregnated with a solution of common salt passed over the surface immediately afterwards, so as to neutralize any excess of caustic; and then, as M. Wecker judiciously advised, the surface should be cleansed completely by the brush dipped in cold water. The effect of these cauterizations is startling in the success which attends them, if conducted with care and thoroughly performed. They need in most cases to be repeated several times, and in severe cases once or twice a day for a time. The inflammation soon assumes a healthy character. It is very rare to see any corneal complications, and the formidable consequences of the disease are avoided. Mr. Hart referred to other modes of treatment which have been recommended and employed: as, for instance, the instillation of strong nitrate of silver drops, &c., which he condemned; radiating incision of the conjunctiva, which he thought rarely necessary and sometimes mischievous; and excision of a portion of the mucous membrane, to which he was much opposed. The application of a strong solution of nitrate of silver to the lids by a camel's-hair brush, as recommended by Dr. Mackenzie, he thought was a useful resource where the solid dilute caustic points were not at hand, but when they were it was decidedly inferior.—*Lancet, Sept.* 5, 1863, *p.* 278.

68.—CATARRHAL OPHTHALMIA.

By Dr. James Henderson, Medical Officer to the Chinese Hospital, Shanghai.

Many cases of catarrhal ophthalmia presented themselves during the autumn. Neglected or left to run their course as all these cases are, many of them go on from bad to worse, and when they first appear at the hospital they cannot be distinguished from bad cases of purulent or gonorrhœal ophthalmia; one or both eyes being often in imminent danger of destruction by sloughing of the cornea, or rapid ulceration. Chemosis is so great, as to overlap the eyelids, and also the greater part of the anterior surface of the cornea, leaving merely a transparent round spot in the centre, like an ordinary sized pupil, the eyelids are much swollen, there is constant purulent discharge,

lachrymation and great pain. I tried the nitrate of silver treatment both in solution and in the solid form, with but indifferent success, ulceration commencing at the extreme margin of the cornea, the overlapping of the chemosis prevented the remedy from being properly applied, and doubtless, this is the main cause of many disappointments by this mode of treatment, opacity of the cornea and prolapse of the iris following.

Latterly, when such cases presented themselves, I began by dissecting off all the infiltrated mass of conjunctiva, round the whole margin of the cornea, and after allowing it to bleed freely, applying lightly solid nitrate of silver to the raw surface, then soaking a little cotton, in a solution of the extract of belladonna, and applying it to the eyelids, the patients were put to bed, and perfect rest enjoined. This treatment has succeeded admirably, not having failed in a single case. It may appear a severe remedy, but to avert blindness, not too severe.—*Report of Shanghai Hospital*, 1862, *p.* 8.

69.—ON IRIDECTOMY IN DESTRUCTIVE ULCERATION OF THE CORNEA.

By Robert B. Carter, Esq., Stroud, Gloucestershire.

[The value of iridectomy in destructive ulceration of the cornea, was first advocated by Von Graefe, and has been fully recognised on the Continent. It has not received so much attention here. G. R., a farm labourer, applied to Mr. Carter on account of an injury to his right eye eight days previously, by a blow of a twig. Loss of vision and great pain followed. He was a feeble, decrepid-looking man.]

I found the conjunctiva of the right eye so much injected, that a pterygium of long standing, on the nasal side, could scarcely be distinguished from the surrounding vascularity. The cornea was nearly perforated by a grey, sloughing ulcer, about three lines in diameter, surrounded by a zone of dense opacity. The ulcer not being perfectly concentric with the cornea, but situated somewhat towards its outer and lower margin, the zone of opacity reached the margin in this direction; while, on the upper and inner side, above the pupil, it left a crescentic portion, which, although steamy and turbid, retained sufficient transparency to show the dark brown colour of the iris, but not to show its fibrous structure. There were no vessels proceeding to the ulcer, nor (except at the pterygium) encroaching upon any part of the corneal margin. Vision was limited to a dim quantitative perception of light, the patient perceiving the direction of the window, but not its outline, nor

its sash-bars. There was severe pain, with nocturnal exacerbation, a feeble, quick pulse, and a worn, suffering aspect. The tension of the globe was not at all, or only very slightly, increased, and was certainly not greater than in the left eye, which, however, was already showing traces of sympathetic irritation. The injured organ had been covered by a folded handkerchief, but not treated in any way whatever.

Prior to experience of the good effects of iridectomy, it would have appeared to me certain, under the conditions I have described, that the impending perforation would be followed by iritis, probably passing on to complete disorganisation of the eye, and involving great likelihood of sympathetic destruction of its fellow.

I placed the patient upon a couch, and made an immediate iridectomy, removing the superior sixth of the iris. The pain of the operation was very acute; and, after applying Arlt's compress, I directed the patient to wait until the pain subsided. It was my intention to see him again, to prescribe an active tonic and sedative treatment, and to give him some general directions. As soon, however, as he became somewhat more easy, he left the house without my knowledge, and did not return until the following Sunday, the 8th of February. He then stated that all pain had ceased three hours after the operation, that he went back to work in the afternoon, and that he had deferred visiting me until Sunday, in order not to lose time. The compress had remained undisturbed, and, on removing it, I found the conjunctival injection much diminished, the section healed, the turbid crescentic portion of cornea cleared, the zone of opacity narrower and less dense, the ulcer receiving red vessels from below, and nearly filled up by plastic lymph. Perception of light had become qualitative, the patient being able to see a sheet of white paper.

As the case had done so well without medication, I re-applied the compress, and sent the man back to his work. On the 11th, the improvement being confirmed, and the patient able to count fingers, the compress was left off, and a band substituted for it. On the 22nd, there remained very little conjunctival injection, the vessels that repaired the ulcer had dwindled away; the place of actual excavation was marked by a well-defined dense cicatrix, its upper border just reaching to the centre of the natural pupil, and the rest of the cornea had regained perfect transparency. The patient could read No. 16 of Jager's test-types without assistance, or No. 14 by the aid of a ten-inch bi-convex lens, and I found that he could do very little more with the uninjured eye. Such a degree of amblyopia is not uncommon among elderly agricultural labourers, who, even when able to decipher simple words, never

read, and who have never been accustomed to exercise their eyes about small objects of any kind. Their wives are preserved from a similar condition by using their eyes about needlework.

The patient was directed to discard all coverings from the eye, and to apply a mild astringent lotion (arg. nit., gr. ij., ad. ℥j.) for the removal of the remaining conjunctival vascularity.

The case above cited is only singular from the absence, at first accidental, of medical treatment; and, this feature excepted, my note-book would furnish several of similar import. In all of them, however, iridectomy was followed by the administration of quinine, or bark and ammonia, with or without opium, and by the local application of atropine and poultices, so that I was unable to determine the precise curative influence of the operation itself. Still the operation has been the turning-point of every case, and the invariable precursor of rapid recovery. Before I practised it, I used to see occasional destruction of the cornea; but such a result has never followed its performance.

It must be confessed, I think, that we do not understand the *modus operandi* of iridectomy. In these corneal cases there is seldom increased tension, and there can hardly be (as suggested by Dr. Mooren in iritis) any retention of morbid matters behind the iris. A very complete division of the radiating fibres of the ciliary muscle is effected when the section for iridectomy is properly made, that is, when it is sufficiently far back, although the circular fibres are left intact. Is it possible that this division may produce a salutary change in the ocular circulation? The surgeons who practise division of the ciliary muscle by puncture seem to think that their procedure exerts some such influence. I tried it in a case of irido-choroiditis with marked, but very temporary benefit, and its repetition was not only useless, but a source of irritation. Shortly afterwards, I saw a patient in whom division of the ciliary muscle, by another surgeon, had been followed by extensive detachment of the retina—a result that the operation is obviously well calculated to produce. It is easy to conceive that the point or edge of the knife may itself detach and push inwards the retina in some cases, and that in others, hemorrhage or effusion under the choroid may produce the same effect. Since then I have entirely abandoned the operation, believing it to be, at the best, a very uncertain and imperfect substitute for iridectomy, and to be beset with many disadvantages and dangers from which iridectomy is wholly free.

The method of performing iridectomy is worthy of a passing notice. Mr. Bowman has sanctioned, by the great weight of his precept and example, such a rapid withdrawal of the knife

as may produce a gush of aqueous humour, and a probable prolapse of the iris. Mr. Ernest Hart has recently advocated the same way of withdrawing the cutting-needle after the smaller incision required for artificial pupil. There is, however, among many operators of large experience a growing opinion that this gush of aqueous humour, and this prolapse of the iris, by the sudden shock to, and displacement of, the lens that they produce, are fertile sources of cataract after the operation, even where the anterior capsule has remained perfectly intact. Until this opinion be disproved, it will be safest to withdraw the knife with extreme caution, and to seize the iris by the introduction of proper forceps within the anterior chamber. This manœuvre is, to say the least, perfectly unobjectionable; it avoids a risk that may be actual, and that we cannot at present call chimerical, and it is perhaps more surgical than the more hurried and less careful method of procedure.

The precise steps of any operation must vary somewhat, however, in the hands of different surgeons; and the essential point is only to do the right thing at the right time. Scores or hundreds of elderly persons lose their eyesight every year by sloughing of the cornea, resulting from some trifling injury; and in all, or in nearly all of these cases, an iridectomy at any time prior to perforation would prevent the threatened mischief. The sufferers are mostly labourers, stone-breakers, hedge-trimmers, and so forth, who can seldom procure the services of an ophthalmic specialist; and it is in the hope of calling the attention of my brethren generally to a simple and effectual means of cure, that I have ventured to seek publicity for my fragment of experience in the matter.—*Medical Times and Gazette, May* 16, 1863, *p.* 503.

70.—ON THE EFFECTS OF THE SOLUTION OF THE CALABAR BEAN ON THE ACCOMMODATION OF THE EYE AND ON THE PUPIL.

By Dr. J. Soelberg Wells, Ophthalmic Surgeon to, and Lecturer on Ophthalmic Surgery at, the Middlesex Hospital.

[Professor Christison several years ago read a paper before the Royal Society of Edinburgh on the properties of the Calabar bean; and recently Dr. Argyll Robertson called the attention of the Edinburgh Medico-Chirurgical Society to the interesting fact that the Calabar bean possesses the peculiar property of stimulating the sphincter pupillæ and the ciliary muscle to contraction.]

Messrs. Bell and Co. having some weeks ago kindly procured for me some of the beans from Edinburgh, and prepared some

solutions of various strength, I have been enabled to make repeated experiments with the extract, the results of which have fully borne out Dr. Robertson's experience. I gave a portion of the strongest solution (one minim of which corresponds to four grains of the bean) to Mr. Bowman, and at his request applied a little to his eye, and he has kindly furnished me with the following valuable notes of his personal experience of its physiological effects :—

"We are much indebted to Dr. Robertson for calling attention to the influence of the Calabar bean on the ciliary muscle and on the iris. His paper is conclusive as to the reality of these effects, and my friend, Mr. Neill, of Liverpool, informs me that he has found the pupil to be contracted by it even in cases of dilatation of the pupil, the result of injury. This would seem to imply a direct specific action on the circular muscular fibres of the iris, and if so, in all probability also on the tissue of the ciliary muscle,—an action of stimulation producing a result the precise reverse of that of atropine.

"I gladly took advantage of the solution of the bean which you brought me, and of your offer to note its effects on my eye. The inside of the left lower lid was touched at 5.5 p.m., on April 30, with, I suppose, about a tenth part of a minim of the solution. Both my eyes are alike in optical power, and are in all respects normal. The pupils had a diameter of rather more than one line. The contact caused a slight smart for a minute.

"In five minutes (5.10) I experienced a decided tight feeling referable pretty accurately to the ciliary region of that eye, as if something were creeping about in it.

"In ten minutes (5.15) this continued, together with occasional rather sharp pains in the ciliary region. An attempt to read with both eyes instantly increased this pain, and the type was confused, as if by a disturbance of the power of accommodation.

"In thirteen minutes (5.18) the near point of the left eye (Jaeger, No. 1) was at six and three-quarter inches, that of the right eye being fifteen inches, thus indicating a spasm of accommodation in the left, and a diminished power in the right eye. With this change, the effort to look at the type or optometer with either eye, or with both, much aggravated the sense of distress in the left eye. The type looked smaller with the right eye than with the left. The far point seemed the same as before in each eye.

"In twenty minutes (5.25) I could see Jaeger 17 at fifteen feet, but with the left eye with a remarkable oscillation in the distinctness, so that the type came and went, at one instant

quite clear, then indistinct, which coincided with the sensations present in the ciliary region, as if the ciliary muscle was undergoing irregular contractions. The left pupil was now observed to have become rather suddenly contracted to the size of a large pin's head; and to avoid repetition, I may state that this contraction continued to the full amount for eighteen hours, then gradually relaxed during about three days, after which it was like its fellow. As it gradually dilated, it also resumed gradually its mobility under light, whether falling on its own or the opposite retina, or on both. With the sudden contraction of the pupil came also a sudden twilight gloom, as of an eclipse of the sun, much more marked when the left eye only was open. But this gloom soon lessened, owing, probably, to the retina, by continuance, becoming accustomed to the quantity of light admitted, and on the next day it was hardly noticeable.

"In twenty-five minutes (5.30) the pupil being extremely small, we noted the astigmatism. The vertical bars of a window were seen clear and sharp at from six to ten feet, the horizontal bars within the same range having thin edges, slightly hazy, but rendered clear by a concave cylindrical glass of fourteen inches focus suitably placed. Distant objects seen by the left eye through a concave spherical glass of fifty inches focus were very decidedly diminished in size.

"In thirty minutes (5.35) the near point by No. 1 of Jaeger was for the left eye at six and a-half inches, for the right eye only at ten and a-half inches, not nearer or further off, and even at this distance indistinct, whereas with the left eye the letters were crisp and clear. To this better sight of the left eye two causes contributed,—the larger size of the retinal image from greater nearness of the type to the eye, and the smallness of the pupillary aperture. With the left eye the near point for vertical lines was at eight and a-half inches, for horizontal lines at six and a-half inches. With the right eye the near point for vertical lines was at eleven and a-half inches, for horizontal lines at seven and a-half inches. The strained feeling of the left eye was less after half an hour, but did not quite cease till the next morning. The attempt to read continued somewhat painful all the evening, and even next day both eyes were somewhat uneasy in sustained vision of near objects, with both eyes or either of them.

"Eighteen hours afterwards (noon on May 1) both eyes were alike as to accommodation, and in both the near point for vertical and horizontal lines was one inch nearer the eyes than natural, viz., for horizontal lines near point seven inches, vertical lines near point nine inches; and at twenty-four feet

each eye could read No. 18 of Jaeger, only the letters were more sharply defined with the left, and looked rather smaller. The pupils were then,—

The eyes in shade, R ○ L ○; in the light, R ◎ ◎ L.

"By way of comparison I accurately examined the accommodation for horizontal and vertical lines with each eye on May 9, and found both eyes alike; the near point for horizontal lines being nine inches, and for vertical lines ten inches for each,—one inch more remote from the eye than after eighteen hours from the instillation of the solution of the bean."

[Mr. Wells then passes on to the description of a case of paralysis of the circular fibres of the iris, and of the ciliary muscle of the right eye (the left being perfectly normal). This case afforded an excellent opportunity, not only of fully testing the efficacy of the bean, but of making parallel and comparative experiments upon the two eyes, and watching, step by step, its effect upon the healthy and the paralysed structures.]

These experiments illustrate most fully the peculiar action of the Calabar bean upon the size of the pupil and the accommodation of the eye. Not only was the pupil of the healthy eye rapidly contracted, but even the paralysed pupil, which before the application measured three and a-half lines, was contracted to two-thirds of a line (the size of a pin's head) within half-an-hour after the instillation of the extract. The maximum of contraction of the pupil was the same in each eye, but the left regained its original size sooner, it also always remained active under the influence of light, whereas the right was quite immovable. The sight of the right eye also rapidly improved, for within a quarter of an hour of the application she could read with it the very finest print, and this whilst its pupil was two and one-third lines in diameter. The effect upon the ciliary muscle was more marked in the left than in the right eye, for in the former the near point was approximated to three inches, the far point to five and a-half inches; in the right eye the near point was never brought closer than eight inches, nor the far point nearer than eleven inches. Stronger concave glasses were consequently required for distant objects by the left than by the right eye. The effect upon the accommodation also ceased much sooner in the right than in the left eye, for in the former the myopia had disappeared five hours after the application, whereas six days afterwards the sight of the left eye for distant objects was still improved by a concave glass of thirty-six inches focus. —*Medical Times and Gazette*, *May* 16, 1863, *p.* 502.

71.—ON THE ORDEAL BEAN OF CALABAR.

By Dr. Thomas R. Fraser, Assistant to the Professor of Materia Medica, Edinburgh University.

Preparations.—The powdered kernel may be exhausted by spirits of wine, of proof or rectified strength.

Water and acetic acid have not been satisfactorily shown to dissolve any of the active principles. A few trials were made with both, and the results were that, by the process of procolation, efficient preparations could be obtained with neither; the infusion, by maceration with water, suspended such variable quantities of the starchy and leguminous constituents as to be quite unfit for any experimental purpose.

Rectified spirit has been usually employed as the menstruum in the therapeutic portion of this investigation, and a tincture of known strength was uniformly administered. The following is the formula for its preparation:—Take of the kernel, in the form of fine powder, ℥j.; rectified spirit, ℥ij. Place the kernel and one ounce of the spirit in a carefully covered vessel, and allow to remain for forty-eight hours. Pack in a procolator, pour in what spirit may be left in the vessel, and add the remaining ounce of spirit. When this has ceased to escape from the procolator, pass as much more spirit through as may be required to obtain two ounces of a golden yellow tinture.

This preparation is so far objectionable, that the kernel is not exhausted by the quantity of spirit used; yet it appears preferable to one obtained by reducing to a certain standard, by distillation, a tincture obtained with a much larger proportion of spirit.

I have found five minims of this tincture a good dose with which to commence the administration. This appears to possess the activity of three grains of the kernel, as far as can be judged by the effects produced. The dose may be trebled without pushing the physiological action to any extreme. The kernel can only be exhausted by employing a much larger proportion of spirit. By using twelve ounces of rectified spirit with one ounce of powdered kernel, distilling off about eight ounces, and evaporating the remainder, first to a syrupy consistence, in a vapour-bath, and then by spontaneous evaporation, twenty-one grains of an extract of considerable consistence may be obtained, or a proportion of 4·375 per cent. This extract has a deep brown colour, and a peculiar, sweetish, and disagreeable odour, for which I can find no comparison. Its actions differ only in intensity from those of the kernel and tincture.

In the physiological portion of this investigation, the syrupy extract mentioned above was largely employed, and it is one of the preparations recommended in the application of *Physostigma*

to ophthalmic medicine. A preparation has also been employed of the extract evaporated to a firm consistence, and partially dissolved and suspended in distilled water. I have used such a preparation, obtained by acting with one drachm of distilled water on five grains of firm extract, representing 120 grains of the kernel, one minim of which possesses the activity of two grains of the kernel. Of this a small drop, rather less than a minim, will maintain a contracted condition of the pupil for five days. This preparation has the objection of being extremely inelegant, as a large portion of the extract is not dissolved, and renders the fluid muddy.

Therapeutical uses.—We are entitled to infer that the important physiological actions of the kernel of *Physostigma* may be employed with the greatest advantage in the treatment of disease.

Its special action on the spinal cord, and the result, though not entirely conclusive, of the experiment with this substance and strychnia, seem to indicate that it may be of service in all hyperæsthetic conditions of the cord. In tetanus, whether *centric* or *eccentric*, the morbidly excited condition of the spinal system may be allayed. In epilepsy, the investigations of Schrœder van der Kolk have so far determined the accompanying pathological changes, that we would be even more sanguine of success from its employment. The *sedative* action on the heart will also, very probably, prove of service. Five minims of the tincture usually shows an influence on the circulation; but in almost every case this dose has been required to be considerably increased before a decided and permanent effect could be produced. When administering it with this view, I have been principally guided in my selection of cases by the condition of the pulse,—a pulse in anywise feeble being considered a decided contra-indication, while one that was strong, rapid, and hard, was considered a true indication for the employment of the tincture. I have found this action of value in erysipelas, delirium tremens, febricula, acute bronchitis, and rheumatic fever, and have detailed a few cases from a number in which this treatment was tried.

The *Anæsthetic action* may be applied to the treatment of all nervous irritations. I have employed it with great advantage in various neuralgic affections, and in irritable stomach. It probably acts by producing a local change in the nerves of the affected region, which interferes with their power of *receiving* or of *conducting* impressions. That it does not depend on any constitutional action of the kernel appears probable from the absence of any appreciable constitutional symptom.

An agent can remove painful impressions in only three ways,

—1st, by an influence exerted on the tissues which cause the pain by their abnormal connexion with the sensitive nerve,—as in the swelling of inflammation; 2nd, by an influence exerted on the organ which receives the impressions,—the cerebrum; and, 3rd, by an influence exerted on the sentient nerve-fibre itself, or on its power of conducting sensation. We have no facts to support the first cause of the sedative action in the present instance, and it is extremely improbable; the second is disproved by the absence of cerebral symptoms; and every probability exists in favour of the last, I have employed both the tincture and the alcoholic extract, the former seeming to me the preferable form of application. Half a drachm to one drachm of the tincture, rubbed on the seat of suffering for fifteen minutes, will remove severe pain for an interval of about two hours, and an ultimate cure may be produced by repeating the application for a limited number of times.

[There is no proof of *Physostigma* possessing any *Hypnotic* properties.]

A *topical action* which will prove of some service is the influence exerted on the pupils. The power which *Physostigma* possesses in contracting the pupils, when applied immediately to the eye, is very great; and the discovery of this is the more important as no substance was previously known to have such an action. In mydriasis, whether dependent on the over-action of belladonna, or as a symptom of amaurosis, especially the hydrocephalic variety; in the treatment of iritis, and of inflammations of neighbouring structures, where the prevention of adhesions may be more successfully secured by an alternation of contraction with dilatation than by dilatation alone; in all cases in which a change in the position of the iris is indicated, as in injuries of the eyeball, with displacement of the iris; as well as in many other cases which will suggest themselves to the ophthalmist, this agent deserves, at least, a trial. The local application is followed by no inflammatory symptoms, and should therefore be preferred to the usual stimulating applications which have been employed to produce contraction. I should recommend for this purpose the alcoholic extract, in the form of either the syrupy extract, or the more concentrated extract mixed with a definite proportion of water.

This preparation, however modified, must be always, to a certain extent, uncertain in the degree of its action, but this is no important objection, as the contraction of the pupil can be produced by a very minute portion of the syrupy extract. The only caution is to employ as small a quantity as possible.—*Edinburgh Med. Journal, Aug.* 1863, *p.* 123.

72.—ON THE CALABAR BEAN AS A NEW AGENT IN OPHTHALMIC MEDICINE.

By Dr. D. Argyll Robertson, Lecturer on Diseases of the Eye, Edinburgh.

[We give the following extract from an able paper by Dr. Robertson on this new and apparently very important remedy. It shortly but clearly points out the cases in which it is likely to prove of use in practice.]

As regards the cases in which this substance may be applied in practice, it is applicable in all instances where atropine is used to render the examination of the eye more perfect or more simple. This includes two classes of cases, those in which dilatation of the pupil is either necessary or desirable to aid ophthalmoscopic examination, and those in which paralysis of the ciliary muscle is necessary, in order to ascertain the state of the accommodation of the eye.

In cases of retinitis, with photophobia, I think it might be advantageously employed to diminish by contraction of the pupil the access of light to the retina, and this more especially in those cases of this disease where the pupil has been dilated for the purpose of ophthalmic examination.

The cases, however, in which I should expect this remedy to produce the most beneficial effects are those in which paralysis of the ciliary muscle occurs as a consequence of long-continued debilitating disease. Cases of this kind are occasionally reported as following attacks of typhus or other fevers. The dimness of vision that forms a frequent sequela of diphtheria appears also to be due to this cause, judging from the symptoms detailed by Dr. Begbie in an admirable paper on diphtheria, recently published in this Journal; therefore, in these cases, good effects may be expected from the use of the Calabar bean.

In cases of ulceration at the margin of the cornea, leading to perforation, or even when prolapsus of the iris has just occurred, as well as in cases where the iris has a tendency to protrude through a corneal wound, the contraction of the pupil induced by this agent might prove serviceable by drawing the iris away from the circumference.

I have shortly pointed out the cases in which I consider this remedy may prove useful, but have as yet had but little opportunity to test it practically; I think, however, there can be little doubt that in the Calabar bean we possess an agent that will soon rank as one of the most valuable in the ophthalmic pharmacopœia.—*Edinburgh Medical Journal, March* 1863, *p.* 820.

73.—ON THE EMPLOYMENT OF THE ALKALOID OF THE CALABAR BEAN IN PROLAPSUS OF THE IRIS.

By Thomas Nunneley, Esq., Surgeon to the Leeds Eye and Ear Infirmary.

[The great reason why wounds of the cornea and margin of the sclerotic are so unsatisfactory in their termination, is, that the iris so frequently prolapses and severe inflammation results.]

Many plans have been suggested for disengaging the prolapsed iris, which, though occasionally successful, far more commonly fail. It occurred to me that if the iris could be kept for some hours on the full stretch, by the almost entire contraction of the pupil, it would not prolapse, and thus the corneal wound might heal by the first intention. The result of two cases in which I have employed the alkaloid (for such I presume it to be) of the Calabar bean is most satisfactory, and would quite justify the belief that if a case be seen immediately after the infliction of the injury, before prolapsus has taken place, or, even though this has happened, before adhesion has occurred, the iris may be kept out of the wound, and this will then heal as after a surgical wound. The two cases were as unfavourable as possible, and the results have been far better than I could have anticipated.

T. B., aged thirty-three, a boiler maker, *twelve days* before I saw him, while driving-in a red-hot rivet, was struck by a small splinter from it, which passed through the left upper eyelid and made a wound in the sclero-corneal junction, through which protruded about a fourth part of the iris. The whole globe was very vascular and irritable; sight was considerably impaired; but the lens did not appear to be implicated, as far as could be judged in the hazy state of the cornea. A small quantity of the extract was blown from the capillary tube, in which it was contained, upon the conjunctiva; within two minutes contraction of the iris began, and in ten minutes the pupil had become small, circular, and central, while the nodule of prolapsed iris had lessened to one-third of its former size. For three hours the effect continued, at twelve hours it had somewhat lessened, and at twenty-four hours had considerably subsided, when another portion of the extract was blown in. The iris at once contracted to the same extent as it had done on the first application, and never again so fully dilated. The pupil remained in a much better position and of a better size. All had been withdrawn from the wound that had not become adherent.

A. S., aged seven years, had the lower margin of the cornea

punctured with the point of a knife eighteen days before I saw him. The iris protruded considerably, though not to the same extent as in the man; and the introduction of the alkaloid was at once followed by the partial withdrawal of the iris from the wound and the diminution and centralization of the pupil, but not so completely as in the first case, occasioned probably by the less perfect application of the extract, as the boy was very frightened, struggling and crying, so that the little that did get upon the conjunctiva was washed out by the tears. Twenty-four hours afterwards, when the effect had subsided, a more perfect introduction of the extract caused within fifteen minutes the pupil to become round, central, and not larger than a pin's head.

In neither case was the least pain or irritation caused; indeed, the effect might be considered soothing, as the vascularity and photophobia materially diminished. No other treatment was adopted for forty-eight hours, in order that the effect might be uninterfered with; and the subsequent progress of both cases was quite satisfactory. The distortion of the pupil and the myocephalon are far less than I have ever seen under similar circumstances, leading to the inference that had adhesion not taken place before the cases were seen the iris would have been restored to its normal condition in each person.—*Lancet, July* 18, 1863, *p.* 65.

74.—CASE OF MYDRIASIS TREATED BY THE SOLUTION OF OLD CALABAR BEAN.

Under the care of ERNEST HART, Esq., Ophthalmic Surgeon to St. Mary's Hospital.

Mr. Hart in calling attention to this new agent said that the need for such an agent had long been felt in ophthalmic surgery, and that he had been experimenting for some time with various substances of which he had hoped that the local application might produce contraction of the circular fibres of the iris. With this view he had employed solutions of various alkaloids in glycerine, including morphine, strychnine, digitaline and ergotine, but the results were not satisfactory.

The original investigator of the properties of the bean was Dr. Christison, who had read an account of those properties before the Royal Society of Edinburgh on Feb. 5th, 1855, in an important paper reprinted in the Pharmaceutical Journal in 1855; and subsequently Dr. Fraser had treated of it in his inaugural thesis. It was one of the most powerful poisons, possessing a direct control over the action of the heart, but not paralysing volition. Its systemic effects somewhat resembled those of aconite. The active principle had not yet been isolated; but

Mr. Hart stated that he believed Dr. Christison was engaged in an effort to procure it; the difficulty at present was due to the scanty supply of the bean. It was held in great veneration by the natives of Calabar as an ordeal poison and was not yet to be obtained in commerce.

Mr. Hart showed the effects of the solution prepared of different degrees of strength. They had been prepared as a watery solution of the alcoholic extract of the bean according to the direction of Dr. Argyll Robertson; that in which one minim corresponded to three grains of the bean answered best. It counteracted the effects of a solution of atropia, of three grains to the ounce, in dilating the pupil—inducing recontraction. Hence it is an agent of great utility in removing the inconvenience of dilatation of the pupil for the purpose of ophthalmoscopic study. Dr. Argyll Robertson had informed Mr. Hart in a letter of the tendency of the watery solution of the alcoholic extract to decompose. This decomposition occurred very rapidly, the solution becoming in a few days pink in colour (instead of being colourless) and fetid. It was arrested by the addition of glycerine to the watery solution. But Mr. Hills—of Messrs. Jacob Bell and Co.'s—had found that the alcoholic extract was soluble in glycerine, or apparently so; and Mr. Hart was now using the glycerine solution. This might prove to be a chemical solution, while the other certainly was not.

The action of the Calabar bean in counteracting mydriasis was well shown in several cases: one of partial mydriasis from paralysis of the third nerve, and one of the same condition from excessive debility after fever and accompanying asthenopia. Its power as an antagonist of atropine is equally shown by the firm contraction of the pupil and accommodative changes which it produces in the normal eye. Its action is, however, less durable than that of atropine: and if it be desired to make use of its curative effects in cases of mydriasis, Mr. Hart thought it would be found desirable to repeat the drop every four hours. Sometimes its instillation caused slight irritation; but there was often none at all.

In conclusion, Mr. Hart said he had been the first who had employed this agent in London, but that he should abstain from publishing at length his observations on the physiological and therapeutic effects of the drug, considering that Dr. Argyll Robertson, who had introduced this agent, and had with great care and sagacity at once investigated its powers and foretold its uses, should be allowed to gather the first fruits in this interesting field of observation which was his own by right of discovery. He would say that his observations completely confirmed those which that gentleman had already published.—(*Lancet, May* 30, 1863, *p.* 604.

75.—OBSERVATIONS ON SOME OF THE EFFECTS OF THE APPLICATION OF THE CALABAR "ORDEAL BEAN" TO THE EYE.

By Dr. John W. Ogle, Assistant-Physician and Lecturer on Pathology at St. George's Hospital.

As the observations, first of all made by Dr. Fraser, and extended by Dr. Robertson, on the effects of the Calabar "ordeal" bean upon the eye will no doubt attract (and most deservedly so) very considerable attention, I have thought it might prove of interest to place on record the results of some of the experiments which I have been induced to make with the same agent. In the present communication, I will notice only the results which I have found to be produced by its application upon the *pupil* of the eye, not wishing to interpolate any mention of such effects upon the power of vision, the "accommodation of the eye," as were manifested at the same time.

I was, in the first place, naturally wishful to determine for myself the fact that the healthy and active pupil of the eye could be made, at will, to contract by the application of this agent; and the following experiments were therefore instituted at the onset.*

Experiment 1.—A young woman, aged twenty-four; the sight of whose right eye was so far impaired that she could only distinguish light from darkness. The left pupil was of the ordinary size, and moderately active; the right one was very sluggish under the action of light, and much larger than its fellow.

I applied a single drop of my weakest solution (No. 1) of the Calabar bean between the eyelids of the right eye at 1.25 p.m. I found at 1.55 that the pupil, which before had been considerably larger than that of the other eye, had become so contracted that it was only of about half the size of the other one. How long it remained so contracted, I am unable to say.

Experiment 2.—A woman, aged fifty-one, with both pupils equal, acting but sluggishly under light, and both of them smaller than natural and healthy pupils generally are. I applied one drop of my No. 1 Calabar bean solution between the lids of

* I have had four preparations of the Calabar bean made for me by Messrs. Bullock and Reynolds. First, a watery solution of a spirituous extract, of which one minim was equivalent to two grains of the bean (No. 1); secondly, a similar but stronger solution, in which one minim was equivalent to four grains of the bean (No. 2); thirdly, a strong spirituous extract, of which fifteen grains were equivalent to four hundred grains of the bean (No. 3). In the use of the former two, I dropped the solution, by means of a camel's-hair brush, between the eyelids: the latter (the extract) I used by first moistening it with water, and then smearing it over the inner surface of the lower lid. The fourth preparation of the bean which I have had made is a paper saturated with a solution, analogous to the atropine paper of Mr. Streatfeild. This Calabar bean paper I have not yet tried, or made use of.

the right eye at 1.40 p.m.; and at 1.55, the pupil was only half as large as that of the other eye.

Experiment 3.—A man, aged fifty-three, paraplegic; with the pupils of both eyes equal, of moderate size, acting well under light. I applied one drop of my No. 1 solution between the lids of the right eye at 1.32 p.m. No visible change in the left pupil was perceptible at 1.40. It had become slightly contracted at 1.55; and it was contracted to half the size of its fellow at 1.58. It was less than half as large as its fellow at 2 p.m.; and at 2.5 this pupil was only about equal to a pin's head in size, the pupil of the other eye having become larger than it previously had been.

Wishing to ascertain how long the contraction of the pupil produced by the Calabar bean would remain, when no means were used for again dilating it, I made the following observation.

Experiment 4.—A boy aged five years and nine months, strumous, with both pupils equal, both very large and mobile under the action of light. I applied a single drop of the weakest solution (No. 1) of the bean between the lids of the right eye at 1.42 p.m. No visible change in the pupil had occurred at 1.50. At 1.62, the pupil had contracted to the size of a pin's head. I saw the boy again at 10.30 p.m., and found that the pupil was very contracted, but not to so great a degree as at the hour previously mentioned. On the following morning, at 10.30 a.m., I again examined the boy's eyes, and found that the pupil was still contracted, but only to a slight degree, and was almost as large as the pupil of the other eye.

Having thus added a proof, and as I think a satisfactory one, that we have a ready means in the Calabar bean of expeditiously, and with tolerable, but not very great, permanence, contracting the pupil, I made the following experiments, with a view of proving its power of effecting contraction of the pupil which had been previously decidedly dilated by atropine. This I was particularly desirous of doing, inasmuch as I have constantly felt the want of the means of contracting the pupil, after I have had it widened by atropine or belladonna for the purpose of ascertaining by the ophthalmoscope the state of the deep vessels of the eye in cases of albuminuria, supposed disease of the intra-cranial parts, &c.

Experiment 5.— The same patient as in the case of Experiment No. 2, with naturally small pupils. Between the eyeball and the lower lid, I introduced a portion of Mr. Streatfeild's "atropine paper," equal to half a drop of the two-grains-to-the ounce solution (*i.e.*, half of one of the squares) at 12.53 p.m. At 1.12, the pupil was very fully dilated. At 1.31, I applied a little of the strong extract of the bean (which I have before spoken of as No. 3). At 1.40, no contraction of the pupil had

been produced, and I then applied some more of the strong extract. At 2.0, there was still no change in the pupil; but at 3.20, the pupil had become reduced to the same size as its fellow. Whether, and to what extent, it became still further contracted, I had no opportunity of judging.

Experiment 6.—A man, aged thirty-six, with both pupils equal, of natural size, acting well to light. I applied between the lids of the right eye one drop of the atropine solution (two grains to an ounce) at 12.7 p.m. At 12.30, the pupil was fully dilated, and I then smeared a little of the moistened extract of the bean on the lower lid. At 1.15, I found that the pupil was beginning to contract. At 1.30, as I found that contraction was not progressing at all quickly, I again applied some of the extract. At 2.0, the pupil was reduced in size to that of the opposite eye. I had no opportunity of ascertaining whether it contracted still further.

Experiment 7.—A man, aged thirty-six, whose pupils were of moderate size, and equal and acting well to light. I applied half a drop of the same atropine solution as in the former case, at 12.7, between the lids of the right eye. At 12.30, the pupil was fully dilated, and I then smeared on a little of the moistened extract of the bean. At 1.15, the pupil was beginning to contract; and at 2.0, the pupil was of the same size as its fellow. How long it so remained I know not.

Experiment 8.—A man, aged forty, with pupils equal, of moderate size, and acting well to light. I applied half a drop of the above used atropine solution at 12.10 p.m. At 12.30, the pupil was fully dilated. I then smeared on the lid some of the extract of the bean; and at 2.0 the pupil was so far contracted as to be almost, but not quite, as small as its fellow.

Experiment 9.—A strumous boy, aged nineteen, with pupils equal, of moderate size, and acting well under light. I applied one drop of a solution of atropine of the strength of two-thirds of a grain to an ounce of water between the lids of the left eye, at 12.16 p.m. At 12.47, the pupil was considerably, but not fully, dilated, and at 12.58 it was fully dilated; I then smeared on some of the extract of the bean. At 1.25, the pupil had not become at all altered, and I then applied more of the extract. At 1.45, both pupils were equal.

Experiment 10.—A young man, with pupils equal, moderately large, and acting well under light. I applied one drop of the atropine solution (two-thirds of a grain to an ounce) at 12.30 p.m. At 12.47, the pupil was beginning to dilate, and at 1.25 it had become much dilated. I then applied some of the extract of the bean over the inner surface of the lower lid, and at 2.38 both pupils were quite equal again.

I was now anxious to know if it would be easy, by means of the Calabar bean, to control the pupil which had been for some time left in a state of dilatation produced by atropine, and for this purpose I made the following observations.

Experiment 11.—A middle-aged man, with pupils equal, moderate as to size, and acting well under light. I applied one drop of the atropine solution (two grains to an ounce) between the lids of the right eye at 1 p.m. At 1.30, the pupil was fully dilated. At the end of a week, I found that the pupil was still very greatly dilated; and at 1.5 p.m., I applied some of the extract of the bean. At 1.20 the pupil was contracted to the size of a pin's head. I then applied one drop of the atropine solution (two grains to the ounce) between the lids, and at 2.31 both pupils were again equal.

Experiment 12.—A middle-aged woman, with pupils active, equal, of ordinary size. The pupil of one eye was widely dilated with one drop of the atropine solution (two grains to an ounce); and, after the lapse of a week, the pupil was found to be still freely dilated, though not so widely as in the week previously. At 1.15 p.m., some of the extract was applied between the eyelids. At 1.20, the pupil was contracted to the size of a pin's head.

Experiment 13.—A middle-aged woman with pupils of equal size, larger than usual, and active. I fully dilated the pupil of the left eye with one drop of the stronger solution of atropine (two grains to an ounce). At the end of a week, the pupil of this eye was still about one-third more dilated than its fellow. At 1 p.m., I applied some of the extract of the Calabar bean on the inner surface of the lower lid. After the lapse of only *twenty minutes*, the pupil of this eye had become reduced in size to that of a pin's head. Possibly this effect was produced much earlier, but I was unable to ascertain how much sooner it had followed the application of the extract, as the patient had left me and did not return earlier.

The following experiments show how readily the pupil, after being contracted by the Calabar bean, becomes again dilated on the application of the atropine solution.

Experiment 14.—A young woman, the same as mentioned in Observation No. 1, had the stronger aqueous solution of the bean, before described as No. 2, applied between the lids of the right eye at 1.53 p.m I did not see her until 2.20, when I found the pupil of this eye reduced to the size of a pin's head. At 2.30, I applied one drop of the atropine solution (two grains to an ounce). At 2.43. no alteration of the pupil had followed; but at 2.50, the pupil had become much dilated; and at 3.5, still more dilated. At the end of a week, the pupils were found to be equal in size.

Experiment 15.—A woman, of middle age, with pupils equal, moderate in size, but rather inactive on application of light, having the arcus senilis in both eyes. Between the lids of the left eye, a drop of the weaker solution of the bean (No. 1), which was now some days old, was applied at 12.56 p.m. At 1.12, no change had occurred; and a drop of the stronger solution (No. 2), which was more recently made, was applied. At 1.16, the pupil was slightly contracted; and at 1.36, very much so. At 1.40, I applied one drop of the stronger portion of atropine (two grains to an ounce); and at 2.10, the pupil was becoming decidedly larger in size. At 2.15, it had attained the same size as its fellow.

In one or two other experiments, which I need not detail, I found that contraction of the pupil which had been dilated by atropine did not at all, or only very partially, follow the application of the Calabar bean solution. In some cases this might be explained by the fact of the iris having been at a previous occasion the subject of disease, and the muscular fibres having thus become altered in character; but I am inclined to think that it was owing to greater disproportion having existed between the strength or quantity of the solutions of atropine and Calabar bean which were used. It appeared to me that some of the Calabar solution, which was a simple watery one, was decidedly weaker in action after having been made some time.

It may be gathered from the above experiments, that we have in the Calabar bean a ready and effective agent for producing contraction of the natural pupil: and also of neutralising the effects on the pupil produced by the application of atropine or belladonna to the eye (which generally remain for a great length of time, and frequently prove a subject of much complaint, by the resulting interference with vision and disfigurement—or, as some would say, the improvement—of countenance.) A little trouble and attention will be required in adjusting the strength of the Calabar bean solution on the one hand, and the atropine solution on the other; but when the proportionate strength of the two antagonising solutions has been determined as nearly as possible, making allowance for individual differences as regards the relative strength of the sphincters and dilators of the iris, dilatation for ophthalmoscopic and other purposes may be at any time resorted to with the certainty of a speedy return of the pupil to its natural state. I am convinced that, for ordinary ophthalmoscopic purposes, one quarter of a square of Mr. Streatfeild's atropine paper introduced beneath the lower lid is sufficient to effect the required purpose, and this should be removed as soon as dilatation commences. But even if, from want of due adaptation, the contraction of the pupil should have been too vigorously carried out by the Calabar bean pre-

paration as counteractive of the atropine dilatation, experiment shows me that this state of contraction is much less troublesome to the patient, and also lasts a much shorter space of time than does the dilatation from atropine or belladonna.

I hope shortly to adduce the results of further experiments concerning the effect of this agent, not only when used in reference to the eye, but also when resorted to in a more general way. Especially, I hope for the opportunity of testing its power of antagonising certain spasmodic conditions of the muscular system artificially produced.—*British Medical Journal, June* 13, 1863, *p.* 613.

76.—ON THE USE OF ATROPINE PAPER.

By J. F. Streatfeild, Esq., Assistant Surgeon to the Royal London Ophthalmic Hospital, and to the Eye Infirmary of University College Hospital.

In the last number of this journal I alluded to other advantages of the use of the new vehicle than that of convenience to the surgeon. More personal experience, and the evidence of many friends in favour of the paper, enable me to speak of some of the cases in which, from one cause or another, it seems to have been especially advantageous. In the first place I must mention those posterior synechiæ, for which we employ strong solutions of sulphate of atropine, to obtain their detachment in this way, if possible. In certain cases of this kind, great pain is experienced by the patient, and in some of them, at any rate, it is obviated by the use of the paper medium for its application. It was so in the most marked instance of this kind of pain I had ever seen—a strong man, of good courage, a hospital patient of mine—he had had syphilitic iritis, and there remained synechiæ, which being recent, and not very extensive, were at last detached by continually using atropine. The man attended very regularly to my instructions ; but the drops used to give him great pain for some time after each application. I told him to warm the solution before he used the drops, as this makes their use very much less disagreeable to the feelings of some patients. I had a new solution prepared in the hospital, but still he could hardly persevere in the treatment, the importance of which I had explained to him. Still he himself regularly applied the drops. When I applied them he used to lie on the sofa, with his hands over his eyes, and groan with pain, which, after a while, became more endurable. Of course, in hospital practice I generally use the drops, which are always at hand, but in this case I tried the paper. He had, from this time, little or no pain, comparatively none ; and, as I have said, the adhesions were finally all detached.

I may now quote another class of cases, for which I am indebted to my colleague, Mr. Dixon. I cannot do better than give his own words concerning the paper altogether, as in them he has given an account of these observations. He says, "I have made great use your atropine paper, which I find *most useful* with children and timid patients of all kinds. The sight of a bottle suggests to them the application of painful drops, whereas, with a little tact, one can put a square of your paper in contact with the globe, without their having any suspicion of its having been done. Within the last few months I have met with three patients, in whom, through some strange susceptibility, the use of a solution of atropine, two grains to the ounce of water, induced not only considerable irritation and redness of the eyeball, but an erysipelatous condition of the lids; one of the patients was a woman under my care at Moorfields, where the drops were applied by the nurse, so that no one knew exactly what had been used. The lids of both eyes became extremely swollen, red, and œdematous; quite as much so as one sees in a case of gonorrhœal ophthalmia. There was, however, no discharge from the eyes, except of tears, nor anything like the characteristic network of catarrhal ophthalmia on the ocular conjunctiva. I had operated on each eye by keratonyxis, for cataract, and, of course, I wished to keep the pupils dilated during the process of solution; but I was unable to continue the atropine drops, for the reason I have stated. I then used your atropine paper, putting a square of it between the lower lid and the globe, every morning, and removing the paper at the end of half an hour. This sufficed to dilate the pupil, without causing any irritation either of the eye or lids.

"I have now another case of the same kind, where extreme redness and swelling of the lids resulted from the use of atropine drops to one eye. The daily application of the paper obviates all inconvenience."

In the same form as the atropine paper, Mr. Squire has prepared some, of a different colour, soaked in a solution of the Calabar bean. It acts quickly as a myotic, and in this way, and as an antimydriatic, the Calabar bean is likely to be so very useful in ophthalmology, that I suppose the paper prepared with it will be in as great demand as the atropine paper.—*Ophthalmic Hospital Reports, Vol.* IV, 1863, *p.* 108.

77.—CASES OF AMAUROSIS PRODUCED BY TOBACCO.

By J. C. Wordsworth, Esq., Surgeon to the Royal London Ophthalmic Hospital.

Within the last three years I have seen a considerable number of cases of amaurosis, apparently produced by the influence of

tobacco. I admit (I need scarcely say) how difficult it is to reduce the etiology of this obscure affection to a demonstration. For, in the first place, amaurosis is attributed to a vast variety of causes, many of which are always more or less in operation; then, again, the disease is dependent on a similar variety of *pathological conditions;* and lastly, our knowledge of the physiology as well as of the pathology of the retina and brain is so limited that we can ill appreciate or define the influence of physiological agents on their structures and functions.

No one can doubt that tobacco possesses properties that are capable of producing great effects on the nervous system at large, nor that the habitual use of it has much influence, of an indirect nature, on the vital reactions. Our only wonder is that the almost universal employment of this powerful agent does not leave vestiges of its influence that are better known and recognised as signs of disease. This may be accounted for to some extent by the rapid cadaveric changes that occur in the nervous elements, thus obscuring or effacing diseased states before we have the opportunity of recognising them.

All the classic writers attribute its full share of causation to tobacco as a source of amaurosis; yet I have not met many that are willing, individually, to allow that they have traced its influence. But it has often happened that the causes of disease are long unrecognised by many, after as full a proof has been made of their reality as possible. For instance, it is recorded, of one of the causes of iritis (that every one now allows) that for many years it was not admitted by men of vast experience that any closer relation than that of coincidence existed between it and syphilis; yet so great has been the revulsion of opinion that some eminent men now seem to think it never occurs except in connexion with that contamination.

Dr. Mackenzie, in his great work on Ophthalmology, expresses his belief that tobacco is a *frequent* cause of amaurosis, and adds that "one of the best proofs of tobacco being a cause of amaurosis is in the great improvement in vision—sometimes complete restoration—which ensues on giving up the use of this poison," and cites a very striking case in illustration. With him I agree also in the conviction that tobacco is a common cause of the cases of partial loss of sight that are daily to be found at our hospitals.—*Lancet, July* 25, 1863, *p.* 96.

78.—ON SMOKING AS A CAUSE OF OPTIC ATROPHY.

By Ernest Hart, Esq., Ophthalmic Surgeon to St. Mary's Hospital.

[Mr. Wordsworth having broached in the columns of the Lancet, the opinion that a definite lesion of the eyeball, viz., white atrophy of the optic nerve, is connected with the habit of

smoking, Mr. Hart makes the following interesting remarks on the subject. He says:]

Fortunately the fundus of the eyeball is no longer concealed from inspection, but with the aid of the means which modern physicists have placed at our disposal we can examine the optic papillæ, the retina, the choroid, and vitreous, as readily as the cornea, and can read off their pathological changes. When, therefore, authors speak now of "tobacco as a cause of amaurosis," we may expect that they will be good enough to define the form of disease to which they apply that very indefinite term. Mr. Wordsworth, when speaking of amaurosis as the consequence of smoking, is of opinion that tobacco produces white atrophy of the optic nerve.

I have been unable to trace the connexion in any case of white atrophy which has come under my notice, and I cannot see that he supplies any satisfactory evidence which can be considered to support that view.

It will be observed that the tobacco disease of which he speaks in the clinical histories is in no way distinguishable from ordinary white atrophy; it seems, indeed, to be avowedly identical with that condition. Now in the first place, to those who will think over the pathology of that affection, it will not seem a very probable suggestion that tobacco-smoking should produce this specific degeneration, without first *very seriously* affecting the other parts of the nervous system, on which it undoubtedly acts more powerfully and directly.

Among the known causes of white atrophy of the optic nerve are cerebral effusion, tumours of the brain, structural changes of the thalami and corpora striata, &c. In order to ascertain whether tobacco-smoking has any claim to be ranked among the unknown causes, I have been examining with the ophthalmoscope all the inveterate smokers on whom I could lay hands among my patients and in a considerable acquaintance. I have not in any case found the least trace of or tendency to white atrophy. On the other hand, white atrophy is found in children and females as well as in adults and males. Of the six cases which have come under my notice recently, and in which I have investigated the question, not one was a regular or considerable smoker; two did not smoke at all. In a very distressing case of double white atrophy now under my care, in which the disease is gradually approaching its last stage and the sight nearly extinguished, the patient has been a very moderate smoker, only smoking when a friend dropped in. He has not derived any benefit from total abstinence. I invite Mr. Wordsworth to reconsider this question, and I believe that a further review of clinical evidence will lead him to the same conclusion as myself.—*Lancet, Aug.* 1, 1863, *p.* 141.

79.—ECZEMA OF THE EXTERNAL AUDITORY PASSAGES.

By Dr. T. McCall Anderson, Physician to the Dispensary for Skin Diseases; Physician to the Deaf and Dumb Institution, Glasgow.

Eczema of the external auditory passages (eczema meatus) occurs on both sides simultaneously in the majority of cases, though sometimes one ear only is attacked. In most instances the auricles are implicated, the disease commencing on the skin of these parts and gradually extending inwards. Sometimes the auricles are affected alone, and, on the other hand, the eruption is not unfrequently limited to the meatus. As the latter class of cases are more frequently brought under the notice of the aural surgeon, the dermatologist is apt to have erroneous notions as to the frequency of the affection.

It may arise from the same causes which call forth eczema on other parts of the body, but the local causes specially operating are the introduction of pins, ear-picks, and acrid substances into the meatus. The patient sometimes complains of a feeling of fulness in the ear, but the itching is the most annoying symptom, to allay which pins or ear-picks are frequently introduced, so as to scratch the parts, the finger-nails, which are employed for a like purpose on other parts of the body being inadmissible. In this way the irritation is relieved for the moment, and the disease proportionately aggravated. The calibre of the meatus is narrowed, often so much so that the membrane of the tympanum cannot be distinctly seen, the amount of the narrowing being dependent upon the amount of infiltration of its walls. There is always exudation from the meatus at some stage of the disease, and the fluid which exudes is either milky or watery, and sometimes so excessive as almost to soak the pillow at night. If the ear is not frequently washed out, the exudation has a very bad odour. At other stages the meatus may be quite dry and scaly, and in connexion with this condition I have frequently noticed the surface of the membrane of the tympanum to be dry and scaly also. Sometimes large quantities of epithelium are thrown off from the meatus, so as to block it up, and cerumen is sometimes mixed up with the epithelial mass. The secretion from the ceruminous glands is, however, for the most part arrested in this affection. The hearing power is often not much impaired; the amount of deafness depending upon the amount of infiltration of the walls of the canal, upon the quantity of epithelium and discharge accumulated in the meatus, and upon whether the drum and mucous membrane of the cavity of the tympanum are implicated or not. Sometimes the

deafness is so great that the tick is only heard when the watch is close to the ear.

The cure is often tedious, as it is impossible to apply local remedies so well to the meatus as to the skin; and strong local applications must be used with caution on account of the delicate structures at the bottom of the meatus. The ear must first be carefully syringed, so as to remove the exudation, and, when the walls of the canal, instead of exuding, are scaly, a few drops of olive oil should be previously introduced, so as to soften the particles and facilitate their subsequent removal. The relief and improvement of hearing following upon the use of the syringe is often so great as to astonish the patient who has allowed the serous exudation and particles of skin to collect in the ear for months. After all the *effete* matter has thus been removed, I frequently paint the walls of the meatus with solutions of potassa fusa (commencing usually with a solution of ten grains in an ounce of water, but the strength must be proportioned to the severity of the disease). A small paint-brush is dipped in the solution, and gently stripped, so that it does not contain too much fluid, then insinuated into the meatus for the extent of half an inch, and twisted round, so that the walls of the canal are entirely moistened by the fluid. This usually causes considerable smarting, which, however, subsides in a few minutes. If the action is very severe, it may be checked at once by the injection of tepid water, for which purpose I am in the habit, previous to the operation, of filling a syringe with it, and holding it in readiness for use, if required. If a strong solution is used (*e.g.*, ℥j. to ℥j.) we must be careful not to take up so much fluid with the brush that it drops upon the drum, as the applications which are appropriate to the walls of the canal cannot always be applied with impunity to the delicate structures at the bottom of the meatus. In cases where the drum participates in the disease, as usually happens, a weak solution (*e.g.*, potassa fusa, gr. iij. to ℥j. of water) may be used as an injection night and morning, which is sufficiently strong to improve its diseased condition in most cases. A strong solution (℥j. to ℥j. of water) may usually be painted on the walls of the meatus every two or three days, but the more severe the affection, and the weaker the application, the oftener must it be repeated. In the intervals between the applications—which I never trust to the patient if the solution is strong—I direct him to syringe out the ear twice daily with tepid water, as before mentioned. The beneficial effects of this treatment are sometimes very marked; the hearing often improves after a single application, the uneasiness in the ear subsides, the meatus becomes wider, and a large quantity of serous fluid exudes, which accounts for

the improvement.—*Medical Times and Gazette, August* 8, 1863, *p.* 137.

SYPHILITIC AFFECTIONS.

80.—ON THE SYPHILITIC AFFECTIONS OF INTERNAL ORGANS.

By Dr. Samuel Wilks, Assistant-Physician to Guy's Hospital.

[In consequence of the more frequent practice of post-mortem investigations it is found that the extent of the influence of syphilis is only commensurate with the tissues of the body, and that, therefore, internal parts of the organism may be affected as well as the external. Not only the cranium but the brain within it, or the nerves, may be affected; not only the muscles of the limbs and tongue, but the heart, pharynx, and œsophagus; not only the larynx, but the trachea, bronchi, and lungs; also the liver, spleen, and other viscera. It must not however be supposed that syphilitic diseases of internal organs are of daily occurrence, they are on the contrary comparatively rarely met with.]

In syphilis there is a disposition to the effusion of a low form of lymph, or fibro-plastic material, in nearly every tissue of the body, occasionally modified in character to a slight extent by the organ in which it occurs. Consequently in those who have died suffering from this disease there is scarcely an organ but what may be found affected in this particular way. In solid organs, or in the interior of the tissues, there is found a more or less circumscribed deposition of an albumino-fibrous material, whilst on the surface of the body a similar material may constitute merely the base and border of an ulcer; for just as cancer and tubercle, in their own peculiar diatheses, show themselves as masses of disease in the solid organs, and as ulcers in the skin or mucous membrane, so in syphilis the viscera may be found full of the syphilitic material, whilst on the pharynx, larynx, &c., an ulceration may also exist.

The peculiar effects of syphilis on the system.—These are characterised in one of their principal features by an exudation of lymph. This may vary somewhat in consistence and form, according to the tissue in which it is deposited, and thus on the skin or mucous membrane it may have a tendency to soften and ulcerate. The oldest observations in connection with such depositions refer to nodes on the bone, due to an exudation of lymph between the bone and periosteum. This node is very inert as regards ulterior changes, although, if not removed by remedies, it may ossify, or, becoming soft, involve the bone in

caries. The iris also at a very early period in the history of syphilis was observed to be liable to a deposition of lymph, which underwent a rapid removal by mercury. In like manner condylomata or mucous tubercles were recognised as one of the effects of the virus, and also eruptions on the skin styled tubercular. It was not until a much later period that nodules of lymph were observed to occur in the tongue, and not until a comparatively recent date that they might be found in other muscles of the body. It is now maintained that all these observations related to the external parts of the body only, or those which could be seen, but that a more extended observation of modern times has shown that the internal parts of the body may be similarly affected.

Mode of formation.—The character which the deposit assumes in a muscle may be taken as that which prevails more or less in all other organs. In the tongue or in one of the muscles of a limb a rounded, hard lump may be felt through the integuments, and thus constitutes a tumour. It differs, however, from the ordinary class of tumours, known as new growths, since the latter proceed from a small point or centre, and continually grow on the surface, whereby they become circumscribed and are constituted wholly of the new material which has been thrown out. This is the case in cancer or tubercle. In the syphilitic tumour, however, the exudation appears to have been, in the first place, of a soft and albuminous character, and being poured out in large quantity, has infiltrated the tissue; consequently, when examined, the lymph and the original structure of the part are found incorporated. At a subsequent period, when this has become hard, if a portion be examined by the microscope, the muscular structure will still be found present in the apparently simple, hard, fibrous mass; and thus it is that, if appropriate remedies be given at an early period, the tissue will be left in its integrity after the adventitious material has been absorbed. This is everyday experience as regards the tongue. In consequence, also, of the lymph being poured out, and not growing from a centre, the diseased mass is not so circumscribed as a new growth, and the lymph or fibre will be found radiating into the muscular tissue around. Thus it is that the surgeon meets with such difficulty in his attempt to remove these tumours by operation; instead of their turning out as an ordinary new growth would do, these have to be actually cut out. If not absorbed by remedies, they become very hard, and then more circumscribed, and remain inert for many years.

In the liver the same process occurs. In this organ the fibroid nodules are not seen, as a rule, until after some years of their existence. They are then hard, more or less circumscribed,

but found shooting out their fibrous rays into the surrounding hepatic tissue. In this case, also, owing to the contraction which takes place, there is often left a remarkable cicatiform appearance on the surface. It is this exudation of lymph or fibro-plastic material and subsequent contraction which peculiarises the disease; thus in the pharynx and larynx, not only is there an ulceration, but an induration at the edges and base of the ulcer, formed by the same material, and in the case of the larynx, as in the instance I shall presently mention, there may be sometimes found a simple fibroid deposit, without ulceration. In the bone a similar exudation occurs in the canals, and if accompanied by caries, is followed by a similar cicatriform appearance as in other parts. This is often well exemplified on the os frontis of the cranium.

Structure.—The deposit which is met with in the liver and other organs has generally had a long existence there before it comes under our notice, and then, when submitted to examination by the microscope, is found to contain fibro-plastic elements, small nuclei, fatty granules, and some amorphous matter. By French and German writers the term gummy tumour is used to designate these syphilitic deposits, but it is a word which I do not adopt, as it would seem to suggest a soft and almost semi-fluid tumour, which is a condition not often met with, except in a very recent stage of the disease; as usually found, they are hard and fibrous, indicating a dried up condition of a fibro-plastic matter; occasionally a secondary softening process may have taken place, and thus in one or two instances the nodules in the liver have been in a semi-liquid state in their centres; but in the best-marked instance of this which I shall have to mention a question existed as to the genuine character of the deposit, and whether, indeed, it might not rather have been the remnant of a dried-up abscess. On the surface of the body or mucous membranes, however, this softening process does take place, and thus we have caries of the tibia and cranium, or ulceration of the pharynx and larynx.

Is the syphilitic deposit peculiar and distinguishable?—This cannot be answered affirmatively, since no elements possessing any peculiarities are found in it. At the same time should nodules of fibroid tissue of the kind described be met with in the liver and in other parts of the body, a strong suspicion would be excited as to the nature of the disease; and should, moreover, they be associated with other conditions usually recognised as syphilitic, the proof of the existence of syphilis would be as satisfactory as that for any other disease. For instance, the elements of tuberculous matter are not so distinctive that a single tubercle in the body is sufficient to indicate its nature; indeed, should the theory of those physicians be

correct, that tubercle is only a modification of inflammatory lymph, it would necessarily require a certain amount or distribution of it, from which a conclusion could be framed. This difficulty, however, in fixing the syphilitic deposit with any peculiar characters, has been considered by some sufficient to discredit its venereal origin, for they have said, why should that be styled specific which presents no other features than those of an ordinary inflammatory product? In answer to this I would say that, in all probability, time will evolve some distinguishing features in these deposits, but in the meanwhile I would demand of the doubters whether they disbelieve in the formation of a node on a bone or lymph on the iris because they are unable to point to the peculiarities of the effused products. I think that the changes in one organ are as characteristic as in another; and thus, if an excavated ulcer, with indurated edges and other peculiarities, is called syphilitic because these are the appearances usually met with in the venereal disease, so in like manner I should say that fibroid nodules in the liver, deposited towards its surface and producing a puckering of the surrounding tissue, are due to syphilis because so frequently met with in that disease. The argument against such a conclusion, taken from the want of any peculiarity of structure, is equally applicable to the syphilitic deposits on the exterior of the body as well as to a large number of other morbid changes in the system.

Liver.—I will speak first of this organ, because it is that which appears to be pre-eminently selected as the seat of the syphilitic formations. It is remarkable that two centuries ago the liver was thought to be affected by the venereal poison, and that since this period more than one writer has alluded to the occurrence of jaundice during the progress of the disease. These, however, were mere surmises, as no mention is made of any tangible hepatic lesion. Indeed, it is only within the last few years that the subject of syphilitic affections of the liver has been brought before the notice of the profession in England. The first description, I believe, was that given by Mr. Busk, in his translation of Wedl's "Pathology," in 1855. So little was it then known, that the author himself appears to have little knowledge of the subject, and gives his information from Dittrich. The latter (Wedl says) has shown that after inveterate syphilis the liver frequently presents a cicatiform tissue on its surface, which may extend deeply into the parenchyma; he has also noticed scattered nodules, consisting, like the cicatriform contracted parts, of connective tissue. These parts are occasionally found in a state of involution, containing an abundance of fat-globules and free pigment-molecules, and when torn asunder also presenting shrivelled nuclei. In the neighbourhood of these fibroid nodules, where the hepatic tissue has

already lost its normal texture, irregular clotted masses, in which no further organization has been set up, may be observed. The callous streaks, penetrating the substance of the liver, of lightish-gray colour, consist of many fibrils, occasionally crossing each other, which when treated with acetic acid exhibit elongated, imbedded nuclei, placed at regular distances apart. Besides this, groups of pigment-molecules are very frequently seen, no longer contained in a cell, whilst in many other situations they are still manifestly closed in a tunic.

[A few examples have occurred where similar deposits have been found in the spleen.]

Lymphatic glands.—Amongst the earliest structures of the body observed to be affected by syphilis were the lymphatic glands, and the same interest attaches to them as formerly in reference to the character of the original sore, when those in the inguinal region are involved. The modern theory is probably correct, that the enlargement and induration of those glands which accompany the Hunterian chancre is an evidence of the true infecting character of the disease. When, however, the whole system has become contaminated, the glands in other parts of the body may become involved, and especially the posterior cervical; but in reference to this there appears to be some question whether they be not enlarged in consequence of some slight eruption on the scalp. In favour of this view it may often be noticed that, when any irritation of the skin exists, they may be observed to be larger on that side where the cutaneous eruption is greatest. It would seem, therefore, to be a question still to be answered, whether the lymphatic glands are affected independently of the part whence the vessels leading to them proceed, seeing that, as a rule, these organs are merely involved in the same disease as the neighbouring textures, as, for example, the mesenteric, by typhoid deposit or tubercle, according to the character of the disease in the ileum; or as the bronchial glands are affected by cancer, tubercle, melanosis, &c., according as the lung itself is, or, as in pneumonia, where they are usually found inflamed, or at least enlarged and softened: for this reason I can quite believe that, since the lung may be affected by the syphilitic virus, so also may the bronchial glands, and therefore that such a case as the following, which Mr. Hutchinson brought before the Pathological Society, is an example of it. An infant, aged five months, died whilst affected with a syphilitic rash, and the bronchial glands were found to be infiltrated with a fibrinous deposit.

As before said, with regard to the liver and spleen, I regard the lardaceous enlargement of the glands as a *consequence* of syphilis. This general enlargement of the cervical, mediastinal,

lumbar, and other glands, is sometimes found in connection with the lardaceous change of the viscera, and arises from a general cachectic condition accompanying mostly a disease of the bone; but if arising from syphilis, must be regarded merely as the sequelæ, and therefore not directly connected with my present subject.

Lungs.—Should further observations prove that many of the cases of disorganization of the lung known as phthisis originate, not in tubercle, but in a low organizable deposit induced by the syphilitic poison, a very important fact in clinical medicine will have been discovered. There is no doubt that exudations may occasionally be found in the lungs, which resemble in every respect those which have been described as occurring in the liver or other organs, and at the same time it is well known that those persons whose constitutions are broken down by syphilis and debauchery often fall victims to consumption; but to connect these two conditions requires many more observations than we have at present at command. For when the lung is disorganized it is very difficult to ascertain the character of the material which has been poured out into it and originated the disease; it may often, indeed, be found to be non-tubercular; but as low forms of inflammatory product are exuded under so many circumstances, we require that it should present some characters more marked before it can be pronounced indicative of the syphilitic poison.

[Ulceration of the *Larynx*, the effect of syphilis, is a peculiar kind of ulceration. It is characterised by the production of a fibro-plastic material which is always tending to harden and cicatrize under the curative process. In tubercular ulceration, there is a highly vascular mucous membrane, and tendency of the ulcers to spread. Ulceration and subsequent contraction may occur in the trachea and even in the bronchi.]—*Guy's Hospital Reports*, 1863, *p.* 1.

81.—ON THE MODERN TREATMENT OF SYPHILIS.

By Alfred Fleischmann, Esq., Associate and late Scholar of King's College.

[The following case is very interesting as illustrating the mild and yet effectual action of calomel fumigation in the treatment of syphilis. The patient was a naval officer, aged fifty. The primary ulcers had healed, but psoriasis had broken out on the hands, and commenced on the soles of the feet, and a few isolated and symmetrical spots were dotted over the legs and trunk.]

The hands were in a deplorable condition, deep fissures in

every flexure of the fingers, which bled with every movement, the bran like scales, covered the floor, and he was so helpless from his infirmity, that to wind a watch, open a door, or lift food to his mouth were painful, and, for the last few days, impossible tasks. The case was typical of the disease.

I recommended that calomel fumigation should be at once added to the treatment, but as I was anxious for my patient to have his mind at rest that the best was being done for him I proposed a journey to London, with the view of seeing Mr. Henry Lee, whose view of the case was identical with my own.

He obtained the registered apparatus from Mr. Blaise, of St. James's-street, and commenced the fumigation the next day. In forty-eight hours, that is after two baths, there was a visible improvement; in fourteen days his hands were as clean and clear as my own; and in a month he was perfectly cured without the least symptom of salivation, or any of the unpleasant and usual concomitants of a mercurial course.

He now has a bi-weekly bath, and in the course of ten days will pass from under my hands.

I can speak in the very highest terms of mercurial fumigation. The apparatus recommended by Mr. Lee, and made by Mr. Blaise, leaves nothing to be desired, though, curiously enough, I was not aware of its existence until my recent consultation with Mr. Lee. The machine consists of sort of basin, beneath which is placed a spirit lamp, and on the top is a circular plate on which is placed the *calomel*, which is the only fumigating powder that can with exactitude and safety be employed. The basin is filled with boiling water, which is kept boiling by means of the spirit lamp underneath. The amount of calomel used should not exceed half a drachm. The apparatus when in use should be placed under a cane-bottomed chair, on which the patient is seated, sitting well forward and enveloped in a kind of moleskin cloak, which should, of course, cover both chair and lamp. After sitting from ten to twenty minutes, he gets into bed still enveloped in the cloak, and remains quiet for two hours.

On this principle, but in a more cumbrous manner, I have treated nearly all my syphilitic patients—whether with indurated or non-indurated, pustular or epithelial chancre, whether with bubo or without. I never had *more* than a tenderness of the gums, however long the treatment has been persisted in; I have never been able to salivate, the chancres have (of whatever character) healed rapidly, and I have never had a single case of secondary in patients who were under my sole care for their first attack, and from the commencement of their attack; and in cases of secondary the progress (as in the case of my text)

has been so satisfactory, that I cease to regard syphilis treated by fumigation as a scourge of nations.—*London Medical Review, May*, 1863, *p.* 571.

82.—ON INHERITED SYPHILIS.

By Jonathan Hutchinson, Esq., Senior Assistant-Surgeon and Lecturer on Surgery at the London Hospital.

[A syphilitic taint in an infant is, generally, readily detected, whereas, in after years, such taint is with the greatest difficulty traceable. Yet the taint still exists, and, as with acquired syphilis, doubtless, produces its own special and peculiar results. How in the adult and young person are we to recognise the presence of the syphilitic taint? The most reliable symptom, according to Mr. Hutchinson, is the peculiar appearance presented by the permanent teeth—especially the upper incisors. We give the following extracts from a small work lately published by him.]

In syphilitic patients these teeth are usually short and narrow, with a broad vertical notch in their edges, and their corners rounded off. Horizontal notches or furrows are often seen; but they, as a rule, have nothing to do with syphilis.

[Other signs, inferior in value but still important, are thus described:]

The skin is almost always thick, pasty, and opaque. It often shows little pits or scars, the relics of a former eruption; and at the angles of the mouth are radiating linear scars running out into the cheeks. The bridge of the nose is almost always broader than usual, and low; often it is remarkably sunk and expanded. The forehead is usually large and protuberant in the regions of the frontal eminences; often there is a well marked broad depression a little above the eyebrows. The hair is usually dry and thin, and now and then (but only rarely) the nails are broken and splitting into layers. If the eyes have already suffered, a hazy state of the corneæ, and a peculiar, leaden, lustreless condition of the irides, with or without synechiæ, may be expected. If, however, the eyes have not yet been attacked by syphilitic inflammation, they will present no deviation from the state of perfect health and brilliancy. The occurrence of well characterised interstitial keratitis is now considered by several high authorities as pathognomonic of inherited taint. It is almost invariably coincident with the syphilitic type of teeth; and when the two conditions are found together in the same individual, I should certainly feel that the diagnosis was beyond doubt.—*Hutchinson's Memoir on Inherited Syphilis, p.* 205.

MIDWIFERY,

AND THE DISEASES OF WOMEN, ETC.

83.—RUPTURED VAGINA DURING LABOUR; CHILD IN ABDOMEN THREE AND A HALF HOURS; PELVIC CELLULITIS; RECOVERY.

By Dr. John Henry Bell, Bradford.

[The patient, aged twenty-eight, had generally enjoyed good health. She had had three children previously, and had easy labours. During this, her fourth pregnancy, she has followed an active occupation.]

Labour commenced on Tuesday, August 6th, 1861, at eight o'clock in the evening, when the membranes ruptured without any previous pain; during the night she had slight, lingering pains in the back and loins; these continued regularly during Wednesday morning, getting what she called "middling strong" in the afternoon, but nothing like so strong as what she had experienced in her previous labours before the birth of the child; about five in the afternoon the pains entirely ceased, her legs became quite numb, and powerless, so that she was unable to move about; she continued in this state until twelve o'clock on Wednesday night, when she was seen by my assistant, Mr. Pritchard; the head had then passed the os uteri, and was well in the pelvis, and he thought it would not be long before being over. There appeared to be plenty of room, the external parts were relaxed, and as she had not had any pains for seven hours, he gave her half a drachm of ergot; this producing no effect, in half an hour the dose was repeated; shortly afterwards, without complaining of much pain, she said she felt "*a tear, a burst, and a flow*," and thought that the child was born; there was a great discharge of blood. On examination, the head was found to have receded considerably, and receded still further before the finger; the hand was carried forward over the side of the head into the abdominal cavity. It was half-past one on Thursday morning, three-quarters of an hour after the rupture had taken place, when I first saw the woman; she was then laid in the middle of the bed, on her right side; everything about her was saturated with blood, although there was no bleeding going

on just then; she did not complain of any pain; there was no sickness, no collapse, no restlessness, no unusual anxiety of countenance; the pulse was small, quick, and regular, and she said she felt rather faint. As she was not laid in a favourable position, she turned herself in bed without assistance, and did not complain of it giving her any pain. On making an examination per vaginam, the head was felt at the brim of the pelvis; the hand passed readily, without the slightest resistance, over the side of the head into the abdominal cavity; the bladder, containing some urine, could be felt in front, the intestines above, and the contracted uterus behind; the limbs of the child were felt with the right hand when applied to the abdomen externally, although not so distinctly as I had expected; the head, when grasped with the hand, could be moved about freely, and brought down considerably into the pelvis. As there appeared to be abundance of room, and the external parts were very much relaxed, one blade of the forceps was applied to the under side of the head, the left hand on the upper side acting as the opposing blade; by this means the head was brought to the outlet of the pelvis, but my hand lost its power, and I was obliged to desist. I had some difficulty in applying the other blade of the forceps, owing to the head of the child receding considerably and being very movable; after I had got them nicely adjusted, having a very good hold of the head, without giving much pain to the mother, considerable force was applied, at short intervals, for about three-quarters of an hour; the head came readily to the outlet of the pelvis, but could not be brought further, and the forceps were then necessarily withdrawn. She was now left for about twenty minutes, to receive the consolations of her spiritual adviser. The pulse and powers were then apparently the same; she was quite calm, able and willing to do anything required of her; I therefore determined to turn. The hand was introduced into the abdominal cavity, almost as high as the stomach: one foot was laid hold of and extricated from the folds of intestine, and the umbilical cord, and gradually drawn downwards: the body of the child was soon born, but considerable force and time were required before the head would come. The operation of turning did not give any pain that was complained of; she was very quiet and patient the whole of the time. The child, of course, was dead. Nothing remarkable in its appearance.

The fingers were now passed along the umbilical cord, and its insertion into the placenta was readily felt; by gentle traction it came easily away, but whether from the uterus or abdominal cavity I could not be sure. I then passed the hand into the vagina, expecting to find that the rupture was of the lower third of the uterus, involving the vagina, but was surprised to

find the os uteri very high, near the sacrum, elongated laterally, but *entire*, and in the position of the left antero-lateral reflection of the mucous membrane of the vagina a large rent, through which the hand passed readily into the abdomen; fortunately there was no prolapsion of the bowel. Immediately after delivery she expressed herself as feeling "nicely;" had no pain or even uneasiness, no faintness; pulse small, weak, and 140. The delivery was completed at four o'clock on Thursday morning, the child having been in the abdominal cavity, and subjected to rather rough usage, for three and a half hours.

[The subsequent reports state that she made tolerably rapid progress towards recovery, chequered by phlegmasia dolens and pelvic cellulitis. The abscess burst into the vagina. A very large quantity of offensive matter was discharged. Twelve months after the labour the report states:]

August 5th, 1862. For many months she has enjoyed her usual good health, and has menstruated regularly until lately; it is now nine weeks since she was "poorly," and it appears likely that she is again pregnant.

On making an examination per vaginam, the position of the rent is felt at once; anteriorly to the os uteri, in the position of the left antero-lateral reflection of the mucous membrane of the vagina is a prominent ridge, about an inch and a quarter in length; between this and the anterior lip of the os uteri is a deep furrow, which, with the ridge in front, feels something like the os uteri; the os uteri is, however, behind this.—*Obstetrical Transactions, Vol.* IV, 1863, *p.* 197.

84.—ON IMPREGNATION.

By Dr. F. J. W. Packman, Wimborne.

It is a well known fact that queen bees lay female eggs first, and male eggs afterwards. Also, that if her conception be protracted beyond a lunar month from her birth, she will produce males only.

In the human female, conception in the first half of the time between menstrual periods produces female offspring, and male in the latter.

Numerous instances of females being "out" in reckoning the time of their parturition gave rise in my mind to a suspicion of the existence of some "law" as a cause; and from the frequency of a male child coming, I usually concluded and predicted that a late case was due to an "idle boy," and rarely failed in being right. The law above stated explains those irregularities: and

its existence has been confirmed by a friend on whose testimony as to its being a fact implicit reliance may be placed.

That law of generation applies also to animals, and probably to all animated beings.

Whether regarded as applicable to produce a male or a female population, an heir or an heiress to a title or an estate, or successor to a throne,—or to the incalculable advantages of breeding male or female stock, and ultimately rendering the whole feminine creation subservient to the necessities and will of man,—it must tend to raise our admiration of the Creator's power of regulating our existence by laws even more mysterious than those yet known to us.

Evidence of the universal existence of such a law, and of its applicability to the purposes of man in "affording a check to an overpopulating of the globe," counterbalancing the effects of war and emigration by raising a male population, in proportion to the demand, instead of females, and in breeding male instead of female flesh for the service and sustenance of our race, may be naturally expected in time, as its bearing among animated nature becomes understood and developed.—*Lancet*, *July* 18, 1863, *p.* 82.

85.—ON INDUCING PREMATURE LABOUR WITH CAOUTCHOUC BAGS.

By Dr. Alexander Keiller, Physician to the Royal Maternity and Sick Children's Hospitals, Edinburgh.

[Dr. Keiller considers that this method of dilating the os uteri to induce premature labour, and assist the natural efforts in some cases of labour at full time, cannot be fairly claimed entirely as Dr. Barnes's discovery, as it had been frequently discussed and successfully practised in Edinburgh before it was adopted by him. Dr. Barnes's very valuable paper will be found in *Retrospect*, Vol. XLVI, p. 169.]

The case in which I, for the first time, used a dilatable india-rubber bag as an obstetric instrument, I shall here recapitulate.

Case of Induction of Premature Labour—Use of Caoutchouc Bag as a Uterine Dilator and Supporting Plug.—Mrs. Field, aged thirty, was delivered of her first child on the 24th January, 1857, after a very tedious labour, extending over nearly four days (from Tuesday until Friday morning). Professor Simpson was called in to terminate the labour, which was effected by turning and subsequent craniotomy. Catheterising was afterwards necessary for upwards of a fortnight,

and a slow recovery took place. I was requested to visit her a few weeks before her next confinement, but the important facts connected with her first labour were studiously concealed from me until it became too evident that parturition could not be naturally accomplished. While stepping into bed on the evening of Tuesday, the 9th of February, 1858, the membranes suddenly ruptured. I was soon after summoned, and on arriving found her complaining of slight pains, which from time to time recurred, without, however, having much effect on the os uteri until early in the morning of the 12th, when, on being sent for, I found the pains of an expulsive character, and the os sensibly more dilated; but delivery could not be safely accomplished until about nine o'clock p.m., when I extracted an unusually large male child after craniotomy. During the progress of, and immediately subsequent to, this second parturition, the cause of the delay and difficulty was obviously traceable to the condition of the pelvic brim, which was preternaturally diminished in its antero-posterior diameter.

The obstetric history of Mrs. F. clearly indicated the propriety of inducing premature labour in the event of pregnancy again taking place, and with this object in view the usual advice was given, which resulted in my being apprized of the expected third parturient period, and the necessary appointment for the induction was accordingly made and kept; for on the evening of Tuesday, the 1st March, 1859, which, in this instance, corresponded with the expiry of about seven-months' period of utero-gestation, I commenced to adopt the plan which I was hitherto accustomed to follow in inducing labour prematurely—namely, that of artificial dilatation of the os, and separation of the membranes from the region of the cervix uteri by digital examination, sponge-tents, and occasional application of the water douche. These means, however, seemed to be unusually inoperative, for although repeatedly had recourse to, very little progress towards useful dilatation was made; and on Friday evening, while assisting the yet imperfect dilatation by means of Kivisch's plan, &c., the membanes suddenly ruptured, and, on examination, the presentation, which was still difficult to reach, was ascertained to be that of the feet, by which delivery might have been accomplished had the condition of the os and cervix been satisfactory; but these parts, notwithstanding what had been done to secure their dilatation, were unusually contracted and firm. I again introduced a full-sized sponge-tent to expedite dilatation and give support to the presenting part of the child, which was, on stethoscopic examination, ascertained to be alive. There being so little progress towards dilatation and no signs of the accession of uterine contraction, there was no great reason to have recourse to

anything like the *accouchement forcé;* and it was not until Saturday morning that I deemed it prudent to adopt further measures to expedite the as yet slow process of dilatation. It was at this point of the case that the importance of having some appliance fitted to expand safely the os uteri, and at the same time calculated to support gently the presenting parts, first occurred to me; and knowing the danger to which the child in this case was exposed by the too early rupture of the membranes, more especially as the presentation was a footling, I was naturally led to think over the plans I had in this and other cases followed, and to compare them with nature's simple plan of securing the ends in view. These reflections, aided by the counsel of my friend Dr. Graham Weir, resulted in my having recourse to the simple caoutchouc bag, which, when carefully introduced within the os uteri and gently distended, at once becomes an admirable substitute for the unruptured membranes, safely opening the passages, and, like the natural "bag of waters," softly supporting and protecting the contained and containing structures when exposed to premature protrusion or undue and dangerous pressure.

I make special reference here, as I have always done in regard to this matter, to Dr. Weir, because it was principally in consequence of his directing my attention to the description of an instrument proposed and used by Mr. Spencer Wells, for "dilatation of the female urethra by fluid pressure," that I was induced think of the advantages to be derived from a caoutchouc bag as a uterine dilator and promoter of labour. While conversing generally and "comparing notes" on our individual experiences of induction cases, and talking over the particular case in hand, we agreed that the instrument described by Mr. Spencer Wells might be of some service, and I accordingly resolved to give it, or something similarly constructed, a trial; but the unsuitableness of such an apparatus to effect sufficient dilatation, together with the objectionable character of its hard and pointed extremity, induced me to prefer an uncomplicated caoutchouc bag and tube, which could be readily inserted in a collapsed state, and subsequently distended or inflated to the desired extent. In such a simple apparatus I thought I saw much of the simple machinery by which nature opens up the os uteri, and simultaneously provides that gentle support and elastic pressure which are usually observed in the mechanism and vital movements of parturition. In this I was not disappointed, for on procuring an ordinary-sized india-rubber inflatable pessary, and using it as I did without unnecessary delay, my impression was at once strengthened, and I soon satisfied myself that the experiment was likely to prove highly successful; for, after folding up the thin and soft

expanding bag which I had just selected, then cautiously introducing it in a conical form through the as yet slightly dilated os uteri, and then, in the first place, slowly distending it with water by means of the Higginson syringe (which I had previously used according to the plan of Kivisch with apparently but little effect), and subsequently and more effectually expanding it by inflation (the mode of expansion which I prefer to that by the injection of water, especially since the improved air-inflating appliance has been introduced), I found that the dilatation of the os and the safety of the child were very materially secured.

The novelty of the means used and the effect produced by the simple appliance were on this occasion so striking that I at once sent for Dr. Weir, and also for Dr. Little, of Singapore, to witness the progress of the case. About eight p.m., on Saturday, after one or two inflations, the os became sensibly dilated, and pains of an expulsive character were for the first time established, the presenting foot now descending through the dilating os at the recurrence of each uterine contraction. With the view of preventing the premature descent of the feet, and at the same time with the object of making the artificial bag otherwise serve the purpose of the natural membranes, I from time to time gently pressed up the feet, and in the absence of pain, gently insinuated and then dilated the caoutchouc bag, which admirably served the important purpose of supporting the feet until sufficient dilatation of the os and passages was secured, and which could not have been more effectually accomplished by a natural bag of unruptured membranes, which this artificial appliance greatly resembled. When Drs. Weir and Little arrived, the case was slowly advancing, and, after examining for themselves, they agreed with me in thinking that nothing could better represent the mechanism, nor answer the important purpose of the amniotic bag, than the extremely simple substitute then used.

The case was allowed to proceed as an ordinary footling, and terminated about ten p.m. in the live birth of a fine female child. This being the first case in which I applied "the new method," I could not but feel satisfied with the result; and as the obstetric advantages derivable from the instrument used, seemed to me to be great, when lecturing to Dr. Simpson's class on the following Monday, I took occasion to show the instrument I had used, to complete the history of the case, which I had referred to in Friday's lecture, and specially to mention the various uses to which I then considered the dilatable caoutchouc bag would be applicable.

Believing that the instrument was novel as an obstetric implement, I took occasion not only to show it, but to speak of

its capabilities, whenever proper opportunities occurred, which at the time were ample enough, seeing that I was then lecturing in the University for my friend Professor Simpson, doing daily duty in the female wards allotted to me in the Royal Infirmary, and attending as the acting physician to the Maternity Hospital, where the instrument was frequently and successfully applied to facilitate labour.

It is not necessary here to repeat what I then said regarding the various uses of the caoutchouc dilator; suffice it in the meantime for me to aver that, ever since I first applied this simple apparatus, I have felt convinced that it is not only an invaluable inducer and promoter of labour, but that in many other important cases in which not only a dilator but a support or plug is called for, it will be of service, and I feel assured that to the obstetrician it will often prove a valuable aid when timeously and properly had recourse to.

I might produce numerous notes of cases from obstetric friends, who were, apparently at my suggestion, led to try this plan for inducing labour; but such a course is here, I apprehend, quite uncalled for; I have, however, selected one note received from our president, Dr. Pattison, who is unavoidably absent to-night.

"Mrs. B. was delivered of her fourth child, a boy, on the 11th of April, 1859. Labour was here induced about the eighth month, as it had been before. Dr. Keiller assisted me and used his dilator, which he had described and shown me at a meeting of the Obstetrical Society (*vide* Minutes). Mrs. B. was not aware when we were to call. The os uteri—the external—was about the size of a shilling, a very small dilator was used and distended with great effect. We got the fingers inserted, when a larger dilator was introduced. In a short time we felt the head floating in the waters at the brim, which could easily be moved about, when a foot and a hand came down. I passed my hand into the uterus and grasped the foot, ruptured the membranes and delivered the child alive. My notes on this case conclude by stating that all was completed in about two hours and a half from the time we first commenced to deliver."

It would appear that, during the discussion which took place on the reading of Dr. Barnes's communication at the sister Society in London, my claim to priority in the using and recommending of the caoutchouc bag as an obstetric instrument was specially referred to by Mr. I. Baker Brown and others, who were well aware that my first cases were reported in March, 1859, whereas Dr. Barnes's first case was in April, 1860.—*Edinburgh Medical Journal*, *March* 1863, *p.* 782.

86.—ON A CASE OF PREMATURE LABOUR INDUCED BY ERGOT.

By Dr. Francis H. Ramsbotham, Physician-Accoucheur to the London Hospital.

On May 10, 1840, Mrs. B., living in Spitalfields, being about seven and a-half months advanced in pregnancy, commenced taking an infusion of ergot for the purpose of inducing premature labour, in consequence of possessing a small pelvis. She was a patient of the Royal Maternity Charity. My father had brought on labour for her twice before, one of which children was living. The uterus began to act in the night. At 2 p.m. on the 11th, the os uteri was dilated to the size of half-a-crown, sufficiently so as to admit two fingers easily, and was very soft. The head was presenting. She had taken four doses. I separated the membranes from the cervix all around as high as I could reach, and made some efforts to dilate the os uteri to a further degree. At 9.30 p.m. the membranes protruded externally, and broke spontaneously. The midwife whose care she was under called on me at 11 p.m. to say that she could not make out the presentation. As I had clearly and unmistakeably felt the head presenting at two o'clock on the same day, I was not a little surprised, and returned with her to the patient's house. I found the right shoulder at the brim, and the funis prolapsed. I could not feel any pulsation in the funis, and therefore thought the child dead. There had been little or no pain since the membranes broke, and without much difficulty I passed my hand into the uterus, laid hold of the right leg, brought it down, and turned the child. It soon breathed and was restored. The placenta came down almost immediately, and she quickly recovered. On January 16th, 1843, she came to my house four and a-half months advanced again in pregnancy. Both her children were then living. N.B.—It may appear that I was mistaken in my diagnosis in this case as far as the presentation was concerned, and that the fœtus had originally presented with the shoulder; but I am quite sure I was not: and such a change in labour from the head to the shoulder has been observed by other practitioners. For instance, Denman says (ch. xiv., sec. 8):—"Having been called to women at the beginning of labour, and finding by an examination that the *head* of the child presented, I have left them for several hours till the first changes were naturally made. When I have examined them on my return, I have found the *arm* of the child presenting, the head being departed out of my reach. I do not know that any practical advantage is obtained by a knowledge of these cases; but it is remarkable that the accident

has always happened to women who were deformed." As, indeed, was the case here.—*Med. Times and Gazette, July* 11, 1863, *p.* 35.

87.—THE INDUCTION OF PREMATURE LABOUR BY MEANS OF NITRATE OF SILVER.

Prof. Giordano, of Turin, states that premature labour may be much more effectually induced by the application of solid nitrate of silver to the cervix uteri than by any other mode. Having introduced it within the cervix, he imparts to it repeated, but slight, rotatory movements, so that most of the surface may undergo the process of cauterisation. While most of the other procedures are difficult, inoperative, or even sometimes dangerous, this one is of the most easy execution, is prompt and complete in its results, and is followed by no ill consequences. A case is narrated in which cauterisation was performed, on account of deformed pelvis, at 9 a.m, of the one day, and the fœtus was expelled at 8 a.m. the next day, the placenta following in an hour afterwards.—*Omodei's Annali*, vol. clxxxii., p. 407.—*Med. Times and Gazette, May* 30, 1863, *p.* 578.

88.—ON THE TREATMENT OF PUERPERAL CONVULSIONS.

By W. W. Jones, Esq., Cleobury Mortimer.

[The following cases occurred in Mr. Jones' practice, they are interesting and not given at too great length.]

Case 1.—February 3rd, 1847. Mary P., aged seventeen, single, was delivered by a midwife, at 7 a.m. Her labour was natural. She was seized, at 12 noon, with convulsions, which continued to occur up to four o'clock, when I first saw her. She was totally insensible; her pulse was 130; breathing stertorous; and her face nearly black. The pupils were dilated and insensible to light. She was bled to forty ounces; calomel and croton oil injections were given; and cold was applied to the head. At 7 p.m. the convulsions still continued. On the following morning, the bowels had been moved several times. She was still insensible. The convulsions had abated; and there was less stertor. On the 5th the patient passed her motions and urine involuntarily; and was totally insensible and very restless. There was much heat of surface. The next day, she was partially sensible, and could swallow a little gruel. On the 7th she was improving. The gums were tender from mercury. A very troublesome cough is noted as having been

present on the next day. The case did well ; but was tedious in consequence of congestion of the lungs, which was relieved by tartarised antimony.

Case 2.—April 6th, 1849. Mrs. M., aged twenty-three, married, primipara, in the ninth month of pregnancy, was attacked, at 9 a.m., with convulsions, which continued until 2 p.m., when I first saw her. She had not been conscious for some time. Pulse 120, full ; breathing stertorous. The pupils were dilated and insensible to light. She was bled to thirty-four ounces ; cold douches were used ; calomel and croton oil were given ; and injectious administered. At 4 p.m., the convulsions continued with violence. The os uteri was firmly closed. The patient was in a state of profound coma. She was now bled to ten ounces. At 8 p.m., the convulsions continued. Pulse 130. There was much heat of scalp, and throbbing of the temporal arteries. The pupils were dilated. Arteriotomy was performed ; and ten ounces of blood were withdrawn. On April 7th, at 4 a.m., the convulsions were not so frequent. The bowels had acted ; and the os uteri was slightly opened. The pulse was 150, feeble ; the respiration was blowing or hissing ; there was no stertor. The membranes were punctured. At 12 noon, labour-pains came on, and delivery took place. The next day the bowels were moved. On the 9th, she was not quite sensible. This case progressed favourably.

The urine contained a large amount of albumen ; and she had swelling of her feet and legs for some time before the attack. The gums became tender from the effects of mercury.

Case 3.—On May 20th, 1856, at 2 a.m., I was called to a lady who had been attended by a surgeon of a neighbouring town, and had been delivered about twelve hours. She was of full plethoric habit ; she had had three very severe convulsions, and was not quite conscious. Her pulse was 140, full and strong ; countenance flushed. I bled her to sixteen ounces, and remained with her. At four o'clock, the convulsions recurred with great violence. I took another twelve ounces of blood, and applied leeches, cold, &c., with aperients and injections. By mid-day she was quite comfortable. In this case I am fully convinced that bleeding was the grand remedy.

Case 4.—On April 17th, 1859, Ann Colley, aged twenty-two, primipara, was attacked with convulsions at 9 a.m. At 12 noon, she was quite insensible. The os uteri was firmly closed. She had lost her eyesight some days before. She was bled to twelve ounces. Labour-pains came on in the course of half an hour. The convulsions subsided after the bleeding, and she was delivered. Her urine was very albuminous, and continued so for several weeks. She perfectly recovered.

Case 5.—On October 23, 1861, Jane Gettens, aged eighteen, primipara, of spare habit, and having a spinal deformity, was attended by a midwife at 2 a.m. Sickness and vomiting, with convulsion, occurred at 3; the convulsions continued to recur every ten or fifteen minutes. I saw her at 7 a.m.; she was then apparently dying. After the convulsions set in, she had very strong labour-pains. I found the head of the child firmly impacted in the pelvic cavity. She was totally insensible; I looked upon the case as perfectly hopeless; but as the fits were so terrific, I had recourse to bleeding (fifteen ounces) and delivery by the forceps. She remained insensible during five days; but eventually did well. Her gums became tender from mercury.—*British Medical Journal*, *May* 23, 1863, *p.* 537.

89.—ON CHLOROFORM IN PUERPERAL CONVULSIONS.

Dr. John M'Nab, Bunnessan, Oban.

[The following observations are made with a view of illustrating the great advantage of chloroform in puerperal convulsions over general bloodletting and the so-called antiphlogistic plan of treatment. It is unquestionably true that bloodletting is still the prevailing system of treatment for puerperal convulsions; this practice Dr. M'Nab considers "empirical," and as resulting from erroneous views of the pathology of the disease.]

The following case may be adduced as a typical example of that form of the disease most frequently met with; and the method of treatment adopted will serve to illustrate the inexpediency of general bloodletting, as well as the specific therapeutical effects of the free and full administration of chloroform. It occurred in my practice some time ago, and the following is an abstract of my notes of the case at the time:

M. M'K., aged twenty-one, a dairymaid—unmarried; a robust and healthy-looking woman, residing in the country; first pregnancy, and arrived at full period of gestation. At eight o'clock a.m., on the 29th August 1859, I was requested by the midwife in attendance to visit her, from the labour being tedious and protracted much beyond the ordinary period. On my arrival, about half an hour afterwards, I found the patient in a violent convulsive fit, and was informed that she had two or three similar attacks shortly before I saw her. During the interval between the paroxysms she did not remain in a state of complete insensibility, but partially recovered consciousness. There was great prostration and confusion of the intelligence, with a tendency to coma. The membranes had ruptured eight hours before my arrival; the cervix was dry and congested; the os not fully dilated; the head high up in the pelvis, and the

presentation natural. The pulse was full, firm, and frequent. The patient had been at this time thirty hours in labour.

With a view of effecting delivery as soon as possible, and of preventing the recurrence of the convulsive fits, I administered chloroform at once, and continued its administration until complete anæsthesia was obtained. I forthwith proceeded to apply Simpson's long forceps, and soon afterwards succeeded in delivering the patient of a fully-developed living child.

Anæsthesia was kept up for some time after delivery, and 3j. of chloroform given internally. There was no recurrence of the paroxysms from the time that the chloroform was administered till I left her. Cold applications to the head and laxative medicine were prescribed.

30th. No recurrence of the paroxysms; consciousness completely restored; pulse still firm and frequent; bowels acted upon. 31st. Patient expresses herself as being "quite well;" rested well last night; pulse 80; no return of the paroxysms. From this time she rapidly improved.

In advocating the superior claims of chloroform as a curative agent in puerperal convulsions to any other with which we are acquainted, and in repudiating those of general blood-letting, it is not necessary that we should pass in review the different and conflicting theories that have been held respecting the proximate cause of convulsive disorders, and the different modes of treatment that have been adopted in consequence. It forms no part of our inquiry to advert to these, excepting so much as is necessary either to substantiate or to refute our arguments. It is quite sufficient for our purpose to testify to the superior beneficial effects of chloroform by unquestionable evidence, and to show that the system of treatment by general blood-letting is not in accordance with the pathological indications of cure; and if we have succeeded in this, the position for which we have been contending is certainly established.

From the above short description of the case, it will be at once observed that it corresponds exactly with that class of cases where we find bleeding and a rigid antiphlogistic system of treatment specially indicated, and regarded as the *sine qua non* to a safe and speedy recovery. Yet in this instance how different the treatment, and how salutary the result; the patient, strong and robust, without having one single drop of blood abstracted, or any other antiphlogistic system of treatment applied, made a good and rapid recovery under the influence of chloroform alone. Here, then, is an instance of the remarkable effects of chloroform in cutting short a disease which has been characterized as one of the most formidable and most serious complaints that a medical man has ever to treat. And it is by no means one solitary instance,—no mere coincidence: many similar cases

have been recorded by men of unquestionable eminence and integrity, which furnish ample testimony of the therapeutic property of chloroform in cutting short convulsive disorders in the majority of cases. And let us remark, in passing, that although our observations are merely applicable to that class of convulsive disorders termed puerperal, yet they apply, in some measure at least, to the whole class of convulsive diseases; for the different kinds of convulsions, however different their remote causes may be, are dependant, or may be regarded, for all practical purposes, as dependant, on the same proximate common cause; for, although convulsions are divided into eclamptic, epileptic, epileptiform, &c., these divisions "do not represent any thing else than ontological forms of disease, whose boundaries can alone be fixed by subjective dogmatism, or, at the best, by practical necessity."

Braun, who is one of our greatest authorities on puerperal convulsions, tried chloroform on an extensive scale on the Continent with the most decided beneficial effects; and the same authority has been led to the conviction that general bleeding, as practised in this disease, is productive of irreparable injury in the great majority of cases, and more especially in the anæmic form of eclampsia. Professor Simpson and others, in this country and in America, have used it extensively, and have borne ample testimony to its great superiority over any other remedy we are acquainted with in convulsive disorders. Dr. Simpson has found it of the greatest benefit in infantile convulsions, after all other means of treatment had failed.

There is, then, abundant evidence of the most marked and most satisfactory effects following the due administration of chloroform as an antispasmodic in convulsions; and with such weight of evidence, it is not a little surprising that physicians should be drawn with such reluctance from following a system that has been superseded by one more in accordance with the pathology of the disease, and fully justified by experience.

Let us now advert for a little to the method of treatment by general bleeding; and, in doing so, we must refer to some views that have been held regarding the pathology of the diseases in question. Convulsions have been regarded as depending essentially on an increased determination of blood to the brain, and general blood-letting has been held to be the most appropriate treatment.

This method of treatment is evidently based on incorrect views of the pathology of convulsive diseases; for recent observations and experiments prove that neither the proximate nor the remote cause of convulsions is to be found in a *hyperæmic condition of the brain*. M. Delasiauve, who has paid great attention to the subject of convulsions, pointed out, for the

first time, that in paroxysms the face is at first pale and anæmic, that the attacks are preceded by signs of a feeble circulation, and that the congestion is greater as the paroxysm begins to disappear. This observation was subsequently confirmed by Trousseau, Georget, Watson, and other accurate observers; and, besides, the experiments of Kussmaul and Tenner clearly proved that convulsions arise from an anæmic condition of the brain rather than from arterial or venous congestion.

Solly, in advocating the theory of congestion, refers epileptiform convulsions to a sudden determination of *arterial* blood to the head, and avers that as a result of this increased quantity of arterial blood, a corresponding increased quantity of nervous force is generated, which is at length discharged or carried off by the motor nerves, and produces, like an electric battery, the convulsive movements in question; but if this theory were correct, the superabundance of nervous power thus generated would produce a corresponding degree of mental excitement and irritation, which is never observed to be the case; and, besides, convulsive movements would attend any sudden determination of arterial blood to the brain, brought about either by vascular excitement or by removing any artificial compression from the carotids, which never takes place. On the contrary, we find that in the history of disease convulsions are almost coincident with the stage of depression, and not with that of vascular excitement.

Again, Dr. Marshall Hall has endeavoured to establish that *venous* congestion of the brain is the cause of convulsive movements. Now, whatever show his theory of laryngismus (or spasm of the glottis) may have as an element in producing convulsions, that of sphagiasmus (or compression of the veins of the neck) stands unsupported either by experimental investigation or by clinical evidence. Romberg, Kussmaul, Tenner, and many other celebrated pathologists, describe those conditions brought about by stasis or venous congestion of the brain as belonging more to apoplexy than to epileptiform convulsions, and are decidedly unfavourable to any theory of venous or arterial congestion that would explain the phenomena of convulsions. And the most recent writer on the physiology and pathology of convulsions, Dr. C. B. Radcliffe (Lancet), tells us that "the clinical history of disease is opposed to the theories that would ascribe convulsion to a congested condition of the cerebral veins. In hooping-cough these veins are often congested in a very high degree during the paroxysm, and yet convulsion is only an accidental accompaniment of the paroxysm. In congestion of the lungs, also, these veins are greatly gorged with black blood; and the consequences of this engorgement are dreamy sleepiness, stupor, perhaps coma,

rarely convulsion. Nor is the case different where extreme venous congestion is brought about by straining, or in any other way; for here the symptoms are coma and paralysis, not coma and convulsion, apoplexy, not epilepsy. Indeed, there is nothing in all this evidence, physiological or clinical, to nullify the conclusion already drawn, that venous blood has no special action in producing convulsion. *Convulsion is the sign of depressed and not of exalted vital action.*"

These arguments, then, are sufficient to show that convulsions do not depend on an increased determination of arterial blood to the brain, or an impeded ebbing of venous blood from that organ. It is vain to seek for the cause of convulsive movements in any determination of blood to the head; and, consequently, it is vain to resort to general bloodletting as a necessary expedient for the cure of any of these diseases.

The causes of convulsive disorders must be sought for in the excito-motor nervous centres; and more particularly in the medulla oblongata, for it is there that the principal reflex movements, whether normal or abnormal, originate.

According to Schroeder van der Kolk, the primary cause of convulsions consists in a superpolarity or exalted sensibility and activity of the ganglionic cells of the medulla oblongata, whereby they are rendered more liable to discharge themselves, on the application of any stimulus, in abnormal involuntary reflex movements.

Kussmaul and Tenner, who have devoted much attention to the subject, have come to the conclusion that the proximate cause of convulsions consists in a sudden interruption in the nutrition of the brain caused by a spasmodic contraction of the capillary blood-vessels, whereby certain molecular alterations of the substance of the brain are produced, the metamorphosis of of tissue disturbed, and those parts of the brain substance having the essential attributes necessary for a reflex act, brought into an exalted state giving rise to convulsive movements. This theory is not so much at variance with that of Schroeder van der Kolk as would at first sight appear, for both agree in this, that the medulla oblongata is the nervous centre whence convulsions chiefly proceed, and that the ganglionic cells of that organ have undergone certain molecular changes, which place it in a highly exalted and excitable condition, or state of superpolarity. They differ, however, in this respect, that the former accounts for the phenomena of convulsions by a state of turgescence or *hyperæmia* of the excitable nervous centres, while the latter explains them by *anæmia*, or a low degree of vitality.

Without attempting to discuss these different theories, it is sufficient for our purpose to know that the real seat of puerperal

convulsions is in the reflex nervous centres, and that there is no disorganization necessary, nor any great organic change in the tissues; but only an increased excitability or superpolarity of these centres, which is produced by some change in the chemical constitution of the blood, to which the condition of pregnancy in some way predisposes.

Dr. Simpson, as far back as 1841, directed attention to the circumstance that albuminuria generally preceded, or was co-existent with puerperal convulsions; and it is extremely probable that this excretion of albumen, which is derived from the blood through the agency of the kidneys, and thrown off in such quantities, produces a change in the chemical composition of the blood that engenders a predisposition to convulsions, which only requires the application of some exciting cause to produce them. The mere predisposition is not alone sufficient to procure eclampsia; there must be the co-operation of the exciting cause,—such as temporary irritation of the mucous membranes, irritation of internal organs, psychical influences, toxic agents, atmospheric changes, and the like.

From these remarks, then, there is every reason to believe that the phenomena of convulsions arise mainly from some molecular change of the reflex nervous centres, caused by the quantity or the composition of the blood that circulates in these centres, and not from any excessive venous or arterial congestion; and that, as regards treatment, our main reliance must be upon anæsthetics and blood-formative substances, rather than on those agent, which depress vital action, such as general bloodletting.

Let us remark, however, in conclusion, that although there is nothing in the pathology of convulsive disorders that would indicate blood-letting either as a preventive or as a means of cure, yet it is possible that the cerebral veins may become so much distended with dark blood, that they may be a tendency to apoplexy, or that the nutrition of the brain may be suddenly arrested in consequence of the impossibility of ærated blood being introduced through the arteries; in these cases, and under these circumstances alone, would we consider general blood-letting, as practised for puerperal convulsions, likely to have any beneficial effect.—*Edinburgh Medical Journal, September* 1863, *p.* 230.

90.—CASES OF PUERPERAL CONVULSIONS TREATED WITH AND WITHOUT BLEEDING.

By R. Prosser, Esq., Bromsgrove.

Case 1.—A. J., first confinement, June 6th, 1860, 4 p.m. She had been in labour four hours. The pains gradually increased,

and in an hour became very strong; and she had a violent convulsive fit. She was bled immediately to about twenty-five ounces; in about ten minutes after she was bled, the convulsion ceased; but she remained insensible for a few minutes longer. Whenever the pains came on strong, the fits recurred with equal violence. The fits and pains continued at irregular intervals, and the labour progressed very slowly for some time. After the head had descended upon the perineum, it seemed to stand; and whenever the pains came on strongly, the fits came on with greater violence. The forceps was applied, and delivery very easily effected. The placenta came away. The uterus contracted, and no hemorrhage occurred. There were no fits after delivery. The patient made a good recovery.

Case 2.—F. W., third confinement, August 6th, 1860. When the pains put on an expulsive character, she was taken in a violent convulsive fit, which passed into a comatose state. She was immediately bled to about twenty ounces. The fits continued; and the case progressed very slowly. The forceps was applied while she was in a comatose state; and the case terminated without any further difficulty or complication. No fits occurred after delivery; and she made a good recovery.

Case 3.—E. W., about eighteen months previous to my attending her, was taken in fits about nine days previously to her delivery. The fits continued about two days. She was bled twice, and had twenty leeches applied to her head. She had no fits during labour. She made a tedious recovery.

On June 4th, 1861, she was in a violent convulsive fit; the breathing stertorous, and face turgid. She sank into a state of quiet unconsciousness, and remained so for about ten minutes. The fits recurred at irregular intervals for the next twelve hours with more or less violence. The kidneys were inactive. A saline diuretic was given; and perfect rest and quietness maintained. The fits gradually became less violent and less frequent, until they ceased. No more fits occurred; and she was naturally delivered eight days afterwards, and made a speedy recovery.

On March 20th last, nine days after confinement, she had a most violent convulsive fit, which lasted some hours, or rather a succession of fits. She bit her tongue; her breathing was stertorous, and face turgid. The bowels had not acted for three days; and the kidneys very little. She had large doses of solution of sulphate of magnesia repeated about every three or four hours, until the bowels acted freely. After the bowels had acted, she was without a fit for six hours when a fit came on; and she was no sooner free from one than she was seized with another. The kidneys continuing inactive she had a saline diuretic, and was kept perfectly quiet, and free from all

disturbance and restraint. She sank into a deeply comatose state, and continued so for eight hours. When she awoke, she expressed herself much better; but complained of feeling exhausted. No more fits occurred; and in a week she was convalescent.

Case 4.—P. D., about two years previously to my attending her, was taken in labour. She had fits; was bled and delivered; and made a good recovery.

On January 8th, 1862, labour had made considerable progress. The pains became very strong; and she was seized with a violent fit. The limbs were rigid; the breathing stertorous; and the face livid. The fit lasted about ten minutes, but recurred again and again, when the pains came on strongly. The forceps was applied without any difficulty. The placenta immediately followed the birth. The uterus contracted, and no hemorrhage occurred. There were no fits after delivery; and the patient made a good recovery.

Case 5.—E. P., first confinement, March 18th, 1861. She had a "good time;" but next day she had a convulsive fit. As I was not at home, a friend saw her and bled her. No fit occurred until the following day, when she was taken much the same. She had a castor-oil aperient: and made a good recovery.

Case 6.—G. O., in February last, had a natural labour; but a few minutes after the birth, she had a convulsive fit which only lasted about five minutes. Neither bleeding nor any other treatment was adopted. She was kept perfectly free from all disturbance; did not have another fit; and made a good recovery.

Remarks.—The first two cases show that bleeding was tried with no benefit; for the fits continued, and only ceased upon delivery. Cases 3 and 4 were subjected at two different confinements to the two different systems of treatment, and recovered equally well. Case 5 was bled immediately, when a slight fit occurred—and yet a similar fit occurred next day. Case 6 was similar to case 5, but got well without any treatment at all.—*British Med. Journal, July* 25, 1863, *p.* 86.

91:—ON THE INJURIOUS EFFECTS OF CHLOROFORM INHALATION DURING LABOUR.

By Dr. Robert Johns, B.A., Examiner in Diseases of Women and Children, Royal College of Surgeons in Ireland.

[We do not give this paper in full, but think it sufficient to present the author's opinion on the subject. From experience, and repeated observation, he is firmly convinced that]

Chloroform, when inhaled during labour, very fruitfully predis-

poses to hemorrhage, puerperal inflammation, chest affections, and to other diseases detrimental to health and life, which it aggravates if given during their presence. It also lays the foundation of diseases to arise at a more distant period, and thus increases the mortality in childbed and subsequent thereto. I have known puerperal inflammation frequently to have followed its inhalation, and too often with a fatal result; in fact, some years since, when it was more fashionable, and was given with a more lavish hand, a great mortality obtained amongst the patients of some few men who administered it—so much so that a popular outcry was raised against its employment. In the majority of those cases puerperal fever was the cause of death, which, when thus raised, being, as I firmly believe, always infectious or otherwise communicable, became epidemicized, after which even those who wisely refused the drug, "charmed it never so sweetly," were thus inadvertently, and, in some instances, hopelessly poisoned.

[Dr. Denham says that the advantages to be gained by chloroform in some cases, will not be found an adequate compensation for the loss of power sustained in the muscles of animal and organic life, and he also observes that in some cases, were its use prolonged, patients might remain undelivered for hours or even days. The cases that apparently require it most—tedious and difficult labours—are those where it often appears to be injurious, by weakening the pains or relaxing the muscles of animal life. Merriman mentions a case where the "uterus was so paralysed that it failed to act afterwards." Dr. Johns cites many eminent authorities to sustain his position; but, on the other hand, many may be cited on the opposite side. We think the question may yet fairly be considered *sub judice.*]—*Dublin Quarterly Journal, May* 1863, *p.* 353.

92.—ON THE ADMINISTRATION OF SECALE CORNUTUM.

By Dr. John W. Beck.

[The following is taken from a paper read before the Ulster Medical Society. The observations on the best mode of preserving the secale are valuable.]

It is a drug the active properties of which are very easily destroyed by damp. It is also very liable to be attacked by an acarus or mite, particularly when damp. It should be procured in substance whole. I have no faith in its powder, or tincture, or extract, or anything else, but itself. After it is procured, it should be carefully dried, and put into a well-stoppered bottle,

with a small piece of camphor. If this is done it will keep sound and active for a long time. The camphor seems to have the effect of preserving it from the attacks of the acarus. Again, a new parcel of the drug should never be placed in the bottle along with the old. What remains of the old stock should be taken out, the bottle well washed and dried, and your new lot, well dried over a stove, if possible, placed in it on the top of a little bit of camphor. I believe that it is from neglecting to preserve this valuable drug properly, or from prescribing some of its *fancy* preparations, that it so often disappoints the expectations of some practitioners as to cause them to lose faith in it. I have no hesitation in saying that if you can procure a sound lot of this drug, and preserve it in the way I have directed, you will be very seldom disappointed in its action if administered in the following manner, and I again repeat, *only in appropriate cases.* I know that latterly when it failed in my hands even once, and particularly if twice in succession, I was inclined to look for the cause in the bottle, and more than once found it then in the bad quality of the drug.

The way I administer the drug is as follows:—I take two drachms, always fresh powdered as required, and boil it in eight or ten ounces of water for about five minutes. I administer this in three or four doses, *as hot as it can be swallowed*, with from twenty minutes to half an hour between each dose. Generally two or three doses are sufficient to produce all the effects required, sometimes one dose will do. If the first or second dose produces little or no effect, you will generally find the third or fourth will produce as little, and I don't believe it is even useful or necessary to go beyond this two-drachm dose, even when the first or second dose is thrown off, as it sometimes is. When it is thrown off, it is not because it is an emetic in the ordinary sense of that word, though it has been called one. It excites the uterine action, and this action (or rather the stretching of the os uteri caused by this action) excites or produces the emetic effects on the stomach, precisely as occurs in cases when no secale has been given. Some one relates the case of a married woman who always vomited while in coitu, and I had a patient myself whom I could make retch at pleasure by touching the os uteri with the tip of the finger, although she could give no explanation herself as to the cause of the retching, or as to why she retched, yet the result of the touch was invariable. I made the discovery accidentally while examining her by the *tactus eruditus.* I had an opportunity of ascertaining some year or two afterwards that the os uteri had lost this peculiar irritability.—*Dublin Medical Press, June* 17, 1863, *p.* 598.

93.—ON THE TREATMENT OF PLACENTA PRÆVIA.

By Dr. Edwin William Murphy, M.A.

[The following extract from the recent edition of Dr. Murphy's work on the Principles and Practice of Midwifery, conveys in concise, but rather dogmatic form, his directions as to the treatment of placenta prævia. Dr. Barnes' suggestion, of separating the placenta from the cervical zone merely of the uterus, a practice that we believe to be in many cases preferable to its total separation, is, however, totally ignored.]

If it should unfortunately happen that you are called to a case of extreme exhaustion—if you find your patient almost pulseless, with cold extremities, cadaverous countenance, perhaps tossing herself about the bed, in the effort to breathe—we have no hesitation in telling you to remove the placenta at once; to plug the vagina immediately afterwards; to give her a large dose of laudanum (forty minims) in brandy; to support in every way the temperature of the surface; and, if you find the action of the uterus still feeble, you may try the electric current to promote its action. (We presume, of course, that the apparatus has been previously prepared for you.) But should the pulse be restored, and reaction at all take place, we think you will find that a full dose of ergot of rye will sufficiently answer the purpose. We do not ask you to remove the child even then, because we are very doubtful that any advantage is gained by doing so. The source of hemorrhage is not at the fundus, but in the cervix uteri, exactly where it is compressed by the head of the child on one side, and the plug at the other; which, it appears to us, will far better control any subsequent bleeding from the sinuses than the removal of the child from the cavity of the uterus. Besides, there is a double risk in such an operation: your patient may be unable even yet to bear the shock that we know it produces, notwithstanding the reaction and signs of amendment. It is also doubtful, as we have stated, whether the sudden emptying of the uterus might not be attended with fatal consequences, when the pressure is suddenly taken off the great venous trunks in the abdomen, which are imperfectly filled with blood. It might be thought unnecessary to plug the vagina after the removal of the placenta, inasmuch as hemorrhage ceases on its separation. We advise it as a *precautionary* measure, to meet the possible contingency that hemorrhage may occur. There is no rule without its exception; and although in ninety-nine cases no flooding may follow, in the hundredth you may regret not having plugged the vagina.—*Dublin Quarterly Journal*, *May* 1863, *p.* 433.

94.—CASE OF PLACENTA PRÆVIA; REMOVAL OF PLACENTA BEFORE DELIVERY.

By Dr. D. M. Williams, Liverpool.

[Dr. Williams, on arrival at his patient's, found the bed-room floor "absolutely covered with blood." The patient was forty-one years of age; had had seven children and one abortion. She considered herself seven months pregnant. The bleeding had, for the first time, come on about an hour before he saw her.]

On examination, I found a small portion of placenta in the vagina, the remainder being applied to sides and front of os, which was dilated to the size of a 5s. piece, very firm, the head pressing on it, no pains, and flooding profusely. I endeavoured to gain time by plugging, but it was useless; I removed the plug, and introduced my hand into the vagina, but found it utterly impossible to turn; there was no time for craniotomy (even if applicable) as I believe she would have died in twenty minutes if the hemorrhage was not stopped. I therefore removed the placenta. The bleeding ceased instantly, and I left nature to finish the work, turning my attention to the general condition of the patient. She was nearly pulseless, very restless, &c. I supplied her with stimulants freely, and presently with beef-tea. At three the pains recommenced, and soon became tolerably frequent, and at four she expelled a male fœtus, and seemed almost as comfortable as if she had not nearly bled to death. She is now rapidly recovering.—*Med. Times and Gazette, Aug.* 22, 1863, *p.* 214.

95.—ON THE DELIVERY OF THE CHILD IN PROTRACTED LABOUR.

By Dr. Edward William Murphy, M.A.

[We extract the following from the 2nd edition of Dr. Murphy's work on the Principles and Practice of Midwifery, recently published. In those cases of very slight deviation from the standard pelvis, when it seems likely that the head will pass, if nature be allowed time for the purpose, the best plan is to wait, though very adroit operators may relieve the tedium of a long attendance by a ready application of the forceps, yet if any accident should arise from this mischievous meddling, the operator is fully responsible for all the consequences that follow from it. When however the head remains actually arrested for hours, if the ear can be felt, or the finger be passed easily between the head and the pubes the forceps is required for the delivery of the child. But when the head is not so arrested, but at the same time advances so extremely slowly that it seems

to be arrested, there is considerable discordance of authorities as to the proper course to be pursued by the accoucheur.]

In the last generation, we find Burns, Hamilton, and Campbell advocating prompt interference when the second stage is making such slow progress, while Wm. Hunter, Osborne, and Denman were opposed to the use of instruments so long as the natural efforts seemed adequate to their object. At the present time, Dr. Collins has laid down the rule "that so long as the head advances, *ever so slowly*, the patient's pulse continues good, the abdomen free from pain on pressure, and no obstruction to the removal of urine, interference should not be attempted unless the child be dead."

This principle has been severely attacked; and in the controversy a new and very important question has been raised by Professor Simpson, which if true, would decide in favour of interference in all such cases. He has shewn from statistics that mortality is increased in direct proportion to the length of the labour; that a labour of four hours' duration is more fatal than one of two hours; one of eight hours than one of four; and so on. Hence the inference that protracted labours are dangerous because of the *time* they occupy. We have given this important proposition the reflection it so justly merits; but confess we cannot coincide in the conclusions drawn from it. It seems to prove too much; that not only are the longest labours the most dangerous, but that the shortest are the safest: neither of these propositions has the support of our experience. The dangers of protracted labour depend upon many causes; and, if the constitution be good, *time alone* is the least injurious. Rapid labours are attended with risks from which those of moderate duration are free. We do not think, therefore, that the shortest labours are the safest, or the longest *in time* the most dangerous. This question must be determined by individual experience: because there are many causes of error very difficult to remove from a statistical calculation, which would lead to a false conclusion. The time which labour occupies involves the question —What causes the delay? If a difficulty exist leading to a fatal result, the death is attributed to the time occupied, not to the obvious cause; so that it may be perfectly true that labours are dangerous in proportion to their protraction, and yet not true that the danger consists in the time occupied. Dr. Simpson has taken Dr. Collins's tables as the basis of his calculation. These were derived from the Dublin Lying-in Hospital exclusively. In that hospital, women were frequently brought in when labour had made considerable advance. Those delivered in one, two, or four hours, may have been a much longer time in labour before they entered the hospital. The actual duration of labours under six or eight hours in that institution was

quite uncertain. These statistical results may prove that every hour spent in the hospital increases the danger to the patient; but this proves nothing with regard to labours of one, two, or four hours' duration; because in such cases there was no certainty as to actual length. The time stated in the report was the duration of labour *while in the hospital.*

With every wish to avoid controversial questions, that before us is too important to pass over. Professor Simpson's able researches have been quoted as an authority for the most unscrupulous use of instruments. Women in perfectly natural, and even easy labours may be delivered by the forceps; and if they be persuaded that it is dangerous to allow the labour to proceed when it can be at once terminated, the argument is a justification for immediate delivery. Thus those whom Dr. Blundell well describes as 'obstetric reprobates' go about with the forceps to deliver the child the moment it comes within reach, and will quote Professor Simpson as their authority for the practice.

This practice is not new; Chamberlen and Roonhuysen followed it when the forceps and vectis were first invented. The mischiefs done by the followers of these men led a succeeding generation to protest strongly against this abuse, some eminent and experienced men, as Osborne, almost excluding the forceps from practice; and thus, ever since, a struggle has been going on between those who consider the art of midwifery to be the quick delivery of the child, and those who believe it to be the art of assisting nature to overcome a difficulty. Those names who stand highest as men of eminence and of the largest experience are perfectly agreed upon the impropriety of unnecessary interference, or, as Blundell describes it, 'mischievous meddling.'

Professor Simpson's statistics show the proportionate mortality in protracted labours, but do not, could not, state the mortality if the duration of labour was shortened by instrumental interference. It is assumed that the mortality would diminish; but this is not proved. We have endeavoured to determine this question in the only way which seemed to us practicable; by comparing the results where the forceps had been used to conclude labour, and where it had been allowed to proceed in a protracted course to terminate without assistance.

For this purpose, the only reports upon which we can depend are those of the Dublin Lying-in Hospital. In all others we have forceps operations, and the results to mother and child, but we have no knowledge of the effects of merely protracted natural labour.

In this respect, therefore, these reports from their fulness and accuracy are especially valuable. Three reports have now been

published, giving the results of different—we might say—opposite practice under precisely the same circumstances :—

Reports of	Total Cases.	Natural Labours above 24 hours.				Forceps Cases.				Vectis Cases.			
		Mothers.		Children.		Mothers.		Children.		Mothers.		Children.	
		L.	D.	L.	D.	L.	D.	L.	D.	L.	D.	L.	D.
Dr. Collins, ...	16,654	324	25	263	61	24	20	4	16	3	3	–	3
Drs. Hardy and M'Clintock, ...	6,634	171	9	119	52	24	19	5	11	17	17	–	8
Drs. Johnston and Sinclair, ...	13,748	247	12	198	49	200	189	11	171	–	–	–	–
	37,036	742	46	580	162	248	228	20	198	20	20	–	11

The total of these reports give the following results :—742 women, having labour protracted beyond 24 hours, were delivered without aid ; 46 died, being nearly in the proportion of 1 to 16 ; 162 children were lost, being in the proportion of 1 to 4·6 ; 248 women were delivered by the forceps, and of these 20 died, or 1 in 12·4 ; 50 children delivered by forceps were lost, or about 1 in 5.

So far, therefore, as the general results are concerned, the mortality of mothers in protracted labour will bear comparison with that where forceps were employed. In both instances the maternal mortality is higher than the average, because it was impossible to separate cases of puerperal fever from ordinary labours. Of necessity, therefore, the mortality was increased. In placing, however, the question in the clearest light, the practice of Dr. Collins, who only used the forceps once in 694 cases, may be compared with that of Dr. Shekleton (Johnston and Sinclair's Report) who used it once in 68¾ cases. Both were in charge of the same hospital and of similar cases. The deaths of mothers delivered (without forceps) in protracted labours, were 1 in 16. (Dr. Collins's Report.) The deaths of mothers delivered with the forceps were 1 in 18. (Drs. Johnston and Sinclair's Report.) If this difference on the one side be compared with that on the opposite (1 in 12·4) from the total results, it may be said to disappear ; proving that, in cases of difficult labour, which are of necessity protracted, mere duration does not increase the mortality.

[Dr. Murphy next quotes the tables of foreign practice, as given by Dr. Churchill, and proceeds :—]

We have endeavoured to prove, from the fairest review of statistical evidence we can make, that, in difficult labours, where so much judgment is required, there is no essential difference in the maternal mortality, whether the forceps be used or not. The deaths of children are also alike, one in five cases. "The total result," says Dr. Churchill, "is that in 5,731 cases" (of forceps operations) "998 children were born dead, or about 1 in 5." (Midwifery, p. 344.)

We have shewn that in protracted labours the deaths of children were 162 in 742 cases, or about one in $4\frac{2}{3}$, an immaterial difference. Hence in such cases the experienced practitioner may exercise his own judgment, uninfluenced by fear of delaying assistance on the one hand or of affording it on the other. In fact, every case of difficult labour requires to be considered individually, and the treatment must vary with the conditions. If it should happen, as in many of Dr. Collins's cases, that time was necessary in order so to mould the head to the inequalities of the pelvis, that it might pass through, the practitioner need not be under the apprehension that every hour's delay increases the danger, and be led against his will to a mischievous interference. If, on the other hand, the case seem to indicate a chance of saving the child and shortening labour without injury to the mother, he will not hesitate to interfere.—*Dublin Quarterly Journal, May* 1863, *p.* 421.

96.—ON A NEW MODE OF SECURING THE HANDLES OF THE FORCEPS DURING DELIVERY.

By Dr. W. Gayton, Fellow of the Obstetrical Society.

[We, ourselves, never require to tie the handles of the forceps in order to prevent the blades sliding or changing their position. During the absence of pains, we relax the compressing force, but retain just sufficient hold of the handles to prevent them sliding out of position. Denman recommends the handles of the forceps to be tied together, "but not in such a manner as to increase the compression on the head of the child." In most of Smellie's plates the handles are tied together by a tape.]

The operation of tying and untying a ligature is associated with so much trouble that the practice is undoubtedly neglected; the consequence is, that the blades are kept firmly compressed against the fœtal head during the whole time of extraction, and this is, unless I am mistaken, the solution to the problem with regard to the excessive infant mortality during delivery by this instrument. If, on the contrary, the

hand is used instead of a ligature, the power applied during manipulation is divided, part being used to keep the handles approximated, and part being expended on the extraction; the hand in this way becomes fatigued, and delivery is probably retarded.

The instrument differs in no way from that in general use, except at the extremity of each handle and in the lock,—the latter is an improvement by the maker (Krohne, of Whitechapel-road). My addition simply consists of a means of junction on the old rack and spring principle: on the one handle the rack and spring is placed, the other is flattened and tapered so as to be received into the furrows made for it. When the blades are applied, and the instrument locked, it may be kept at any degree of compression by simply raising the spring and allowing the end of the handle to advance or recede as desired. In this way, during the interval of pain, the pressure is in a moment taken off the fœtal head, and as quickly replaced; nor do I believe does the addition in any material way interfere with the action of the instrument, especially if the rack be kept downwards.

The value of any instrument is only proved by oft and repeated trials. In my own hands it has proved successful, and I can confidently await the verdict of a wider experience. The main object of the inventor was to provide a suitable means of uniting the forceps when applied, without the incumbrance of ligatures (which are not always at hand), and, if possible, to lessen infant mortality. One or other of these objects being answered, the object has been attained; and I trust another addition has been made to obstetric art.—*Medical Times and Gazette, August* 29, 1863, *p.* 218.

97.—ON A CASE OF COEXISTING EXTRA- AND INTRA-UTERINE PREGNANCY.

By J. P. Pennefather, Esq., Tottenham.

[The patient was thirty-eight, and the mother of five children. During this, her sixth pregnancy, she was troubled with many unpleasant symptoms, as excessive vomiting and abdominal pain. The abdomen attained an enormous size.]

On September 4th, after six hours' labour pain, a full grown female infant was born. The abdomen still appearing very large, the gentleman in attendance suspected a twin case; but after remaining some hours, and carefully examining, he pronounced the enlargement to be an ovarian tumour. I received a telegram to this effect, and immediately left for her house.

I found Mrs. H. in a very happy frame of mind, and quite free from pain, the birth of the child having releived the enormous tension. On examination externally, I found a large hard swelling to the left of the umbilicus; and after long and careful search I distinguished the fœtal tick, as well as the movements of a fœtus. I communicated my opinion to the medical man, who however was not equally fortunate, and still adhered to his diagnosis. I distinctly traced the outline of the uterus on the right, but not satisfactorily on the left side. I thought we might here have a case similar to Madame Bovin's, and recommended the administration of ergot. The action of the drug I watched closely, and found that, though acting powerfully on the womb, the tumour was uninfluenced by it. Half an hour after it was given, I could find no further movements. On a vaginal examination, I found the womb had considerably ascended. I then formed the opinion that the case was one of coexisting intra- and extra-uterine pregnancy. The patient was greatly emaciated, but now seemed to gain flesh rapidly; there was but slight discharge from the vagina; and the breasts secreted no milk. Her recovery was steady and uninterrupted.

Dr. Oldham was consulted, and pronounced the swelling to be an ovarian tumour. This lady came on a visit to me soon after, and, as she was leaving the neighbourhood of London, I took her to Dr. Ramsbotham, who passed a uterine sound, and found the womb normal. From my description, he agreed with me as to the nature of the case. When leaving, I laid down certain rules of treatment, impressing the necessity of calling in medical aid should the bowels become at all irritable.

For three months her general health steadily improved. At the latter end of January, 1863, she was obliged to call in medical assistance. In the early part of February hectic set in, with distressing diarrhœa and profuse sweats; the pulse ranging from 120 to 160. Opium was the only drug which exercised any influence over the bowels; the mildest purgative caused such hypercatharsis and depression that large doses of stimuli became necessary to support her. On February 14th, the gentleman in attendance detected fluctuation in the left iliac region. Concluding that it was fluid in the ovary, and the patient's condition being very unfavourable, with the perfect concurrence of the two gentlemen called in consultation he plunged a full-sized trocar into the swelling. No fluid flowed, and on withdrawing the trocar it was covered with fæces. The patient was kept on her back, and the puncture healed rapidly. The hectic immediately subsided, and all bad symptoms were for the following ten days much relieved. The bowels then

became troublesome, tenesmus occurred, and emaciation was extreme. (The above account from January, 1863, I received from the surgeon in constant attendance).

On the 10th of March I received a telegram requesting my presence. On examination, I found the abdomen much reduced in size; the prominent swelling had disappeared; and it was only after careful investigation that I could detect any hardness. From the subsidence of the tumour, and the account I received of the immense quantities of fæcal matter passed, I felt inclined to change my opinion to that formed by the gentleman then in attendance—namely, that the tumour was caused by a collection of fæcal matter in the intestines. Concluding that if such were the case, the tenesmus arose from an accumulation of hard fæces in the rectum, I introduced my finger with much difficulty, owing to the extreme sensitiveness of the part; but the examination caused so much pain, almost amounting to agony, that I was compelled to desist. Not being able to obtain a speculum, and being obliged to return to town that evening, I urged on the patient the necessity of allowing it to be used. (Her long sufferings had made her rather intractable). I sent one from town, and on the following day was again sent for. I found that, when using the speculum ani, a shred was seen hanging from the vagina; and on examining it, a bone of the fœtal skull was seen at the orifice. Feeling certain, from the state of the patient, that unless speedy relief was afforded, twenty-four hours would probably fatally end the case, I determined at all hazards to extract the whole of the offending mass.

The patient being placed slightly under the influence of chloroform, I carefully introduced a large speculum into the vagina, and about midway came in contact with bone. I dilated the instrument and brought away one of the parietal bones, keeping the edges in contact with the sides of the speculum. A little higher up I met with the occipital; and then, having well syringed out the vagina, I carried the instrument up to the os, which I did not distinguish. I saw a fleshy mass presenting, and with a long bullet forceps pulled away the clavicles and scapulæ. Having got a firm hold of the sternum, I gradually brought forth a full grown male child, minus the head, much decomposed and saturated in fæces. The vagina was again well syringed out, large quantities of fæcal matter flowing from it. I left the patient, on the following day, much relieved and free from pain.

On examination with the speculum two days afterwards, I was informed, a large rent had been discovered to the right of the os. For some days all fæcal matter passed per vaginam

about every half-hour; this, however, has gradually diminished, and at the present time (May 14th) all the dejections pass naturally; her strength is fast returning; her appetite is excellent; and her mind, which from long suffering became rather enfeebled, is fast regaining its tone. She has come a long railway journey without inconvenience, and is in all respects progressing most satisfactorily.

Thus has terminated favourably a case which I believe to be unprecedented, those on record having ended fatally in the early months of gestation. After such a long period of suffering, nature proved sufficient to repair an injury which from its position art could with difficulty accomplish, and the continuance of which would have made life a burden. When first the case was diagnosed as an ovarian tumour, I doubted the possibility of pregnancy going on to the full time with so large and irritable a growth of the ovary. Dr. Rigby, in his work, says that pregnancy to the full time of gestation cannot exist with either a large or rapidly growing ovarian tumour; with which I fully concur. Here we would have had not only a large but also a very irritable one. This led me in the first instance to examine very minutely. I am inclined to think that the ovum was arrested in the left fallopian tube; that it ulcerated its way into the intestines; that the bones of the head became fixed against the upper part of the recto-vaginal septum, and there ulcerated a passage through. The body must have been in the intestine when I operated. With the great care used, I do not think that the parts were lacerated much more than that destroyed by the ulcerative process. The puncture, which at the time was looked upon as a grave error, acted beneficially, for the fœtus descended immediately after it; and from the escape of very fetid gas, together with what I could ascertain of the amount of urine passed that night (the patient not moving off her back), I think that the cyst was punctured, and that the fluid escaped by the bowels.—*Lancet, June* 20, 1863, *p.* 688.

98.—CASE OF PRESENTATION OF THE RIGHT ARM AND SHOULDER—DELIVERY BY THE NATURAL POWERS, OR SPONTANEOUS EVOLUTION.

By Dr. Richard Hodges.

On Sunday, the 8th of January of the present year, I was summoned to visit a lady in labour with her fourth child. At eleven o'clock on that day, the os uteri was found fully dilated, and the membranes protruding through it, distending the

vagina; but no presentation could be ascertained. During a pain the liquor amnii escaped, and no more uterine action occurred throughout that day, the following day, Monday, or the next, Tuesday, until towards the evening, when, on account of slight pains, I made an examination, and found a hand high up presenting. The patient was cheerful throughout this interval, sat up the greater part of each day, felt as if nothing was the matter with her, and considered it strange that the process of labour should have been so suspended. The pains, however, did not forget to return; they kept returning and increasing in intensity, and with their return the presenting part was more and more easily recognised. Ascertaining that the right hand, arm, and shoulder presented, and believing it unlikely that delivery would take place without assistance, I cautiously introduced my hand into the uterus, with the view of bringing down the feet; but I was unable to do so, from the uterus firmly embracing the fœtus, and preventing my hand passing on far enough to seize them. By the continuance of the pains, however, the presentation was forced lower and lower; the arm and shoulder now protruded at the pubis, and the side of the chest pressed out the perineum; the breech, by further efforts at this time, descended and turned forwards, and was expelled as an ordinary breech presentation, the body of the child curving or bending to a sufficient degree to admit of delivery quickly taking place, the arm and shoulder all the while remaining under the arch of the pubis, and not receding. The head was now alone left, and soon extruded, and the whole process was over at two o'clock on the morning of Wednesday, and in less time than on previous occasions when the presentation was natural. The child was above the average size, and, there is reason to believe, had been dead several days.

The case just narrated is interesting, not only on account of showing the fact that nature is, for the most part, adequate to the end in view,—that she is the best and safest physician,—but also in exemplifying a mode in which expulsion under such circumstances takes place, and regarding which a diversity of opinion has prevailed; one supposing that the lower extremities descended during a pain, and made room for the upper, which ascended as the others came down, till, the body turning round on its axis, the breech was expelled, as in an original presentation of that part; while another, believing it impossible for the upper extremities to mount up into the contracting uterus, and that, consequently, no part which has once protruded ever receded.—*Edinburgh Medical Journal, June* 1863, *p.* 1133.

99.—CASE OF TRIPLETS.

By William Furnivall, Esq., Hutton, Somersetshire.

On the 11th of April last, I was called up, about one o'clock in the morning, to go to the village of Bleadon, to attend in labour a poor woman of the name of Emma C. Bleadon is situated about two miles from my residence, so that when I arrived at my patient's house it was very nearly two o'clock. She had given birth to a male child, about five pounds and a half in weight, more than an hour, when I reached her; but two women, who were staying with her, told me they believed there was another child behind, as the size of her abdomen did not seem much, if any, diminished. On placing my hand on her abdomen, I at once coincided with the women that there still must be another child to come. I of course made an examination per vaginam, and felt, very high up, the membranes containing another child beginning to protrude from the os uteri. At that time I could not, with any degree of certainty, say what the presentation was; neither could I do so till about four o'clock in the morning, by which time I very easily discovered the feet presenting. By five o'clock, with only a trifling interference on my part, a female child was born, which would have weighed about six pounds. The abdomen now had not very materially diminished in size, and still remained very hard, so that I was convinced the uterus, even yet, had in it a deal more of something than the placentæ. I again made an examination, and found a something beginning to protrude from the os uteri. In the space of half an hour it had sufficiently advanced to satisfy me that another child was making its way feet first. I very soon was enabled to seize the feet of this, the third, another male child, of about six pounds weight; and as the external parts were well expanded, from the births of the two previous children, I had no difficulty whatever in bringing it into the world. The hardness of the abdomen had now much given way, but its size was still very great, occasioned, in part, from two placentæ, and in part from a rather unusual quantity of blood the uterus contained.

In a few minutes after the birth of the last child the woman became very faint, her pulse being scarcely to be felt, and fearful hemorrhage came on. I, therefore, found that it would not do to delay matters, having satisfied myself that the placentæ were still adherent. I at once introduced my hand into the uterus and removed the placentæ, and, as contraction of that organ did not immediately follow, I gave her a drachm of the liquor secalis cornuti (Curtis) in a little strong brandy-and-water. This afforded her temporary relief only, for the hemorrhage continued, though in a less alarming degree, for an

hour and a half from the time the last child was born. I gave her a second dose of the ergot, and continued the brandy-and-water till such time as I considered it safe to discontinue it, which was not till nearly three hours after the birth of the last child.

The woman's recovery has been protracted, on the whole, but I am now able to pronounce her (five weeks from the time of her confinement) well. The three children are all alive, and, as far as I am able to judge, likely to live.—*Lancet, July* 18, 1863, *p.* 81.

100.—NEW MANNER OF PLUGGING THE VAGINA.

[The following extract is taken from a paper by Dr. E. P. Bennett, in the American Medical Times.]

In placenta prævia, and in cases of abortion, the life of many a female is saved only by the judicious use of the *tampon.* This operation, so efficient, is many times a troublesome one, both for practitioner and patient, especially when the substances introduced have been saturated with astringent solutions, as they usually should be to render them doubly efficient. In early life, I found much trouble in this respect, as the alum or other astringent so corrugated the parts as to render their introduction difficult and painful. Now, by using a common *glass speculum* all trouble is at once removed. You can pack the vagina to its utmost capacity in a single minute, without any trouble or suffering to your patient. In cases of abortion, in two instances where a small portion of placenta remained beyond the reach of instruments, and where hemorrhage was long continued and alarming, I succeeded in saving the women by plugging the os uteri with a piece of sponge—an operation easily done through the speculum, but almost impossible without it. One of these ladies was, and now is living in your city, and was reduced to the lowest condition. This plan may have been pursued by others; but so far as my recollection serves me, I have not seen it mentioned.—*Glasgow Medical Journal, July* 1863, *p.* 254.

101.—ON BRONCHO-PNEUMONIA IN LYING-IN WOMEN.

By Dr. Robert Barnes, Physician to the Royal Maternity Charity.

[That lying-in women are liable to a peculiar form of broncho-pneumonia has probably been observed by most accoucheurs. It is generally set down as the effect of "taking cold." This explanation Dr. Barnes considers insufficient.]

As in typhoid fever, so in puerperal fever, the lungs are apt to be involved. In either case the cause is similar. I may here observe that a marked characteristic of typhoid fever is extreme alkalinity of the blood. The urine I have frequently found highly ammoniacal on voiding. A similar condition commonly marks the blood in puerperal fever. On one occasion I observed that the bladder, being partially paralyzed, and the urine consequently retained in the intervals of being drawn by the catheter three times a-day, the urine decomposed so rapidly in the bladder as to evolve large quantities of ammoniacal gas, which escaped in a stream with a gurgling sound when the catheter was introduced. These symptoms, with others which need not be enumerated, indicate a discrasia of the blood, which must produce certain irritating effects throughout the body. The diarrhœa of puerperal fever, and the diarrhœa which frequently appears in childbed, apart from overt fever, is the simple effect of the irritation of the intestinal mucous membrane by the septic or other offending matter circulating with the blood. Peritonitis, cellulitis of the limb, synovitis,—all arise in the same way.

Accompanying this diarrhœa, or apart from it, we may have broncho-pneumonia. This, in like manner, is simply the effect of the irritation of the bronchial mucous membrane or parenchyma of the lungs by the same offending matter. In some of these cases the breath of the patient has possessed an odour distinctly resembling that of the lochial discharges. Broncho-pneumonia may, in short, be regarded as a symptom, or a part, of puerperal fever. But in many cases the fever is masked, or so slight that it escapes observation, and the attention is fixed upon the pulmonary symptoms alone.

In these cases there is generally a considerable degree of prostration. The whole or the greater part of the mucous tract of the lungs is involved. The expectoration amounts to bronchorrhœa. Large and fine crepitation are heard in almost every part of the chest. The sputa are sometimes tinged with blood. Depletion is not borne. The most successful treatment consists in the administration of cinchona, senega, or serpentaria, in the form of decoction or infusion, with ammonia, and at a later stage with nitro-hydrochloric acid, blisters to the chest, good nourishment, in the form of strong beef-tea, eggs and milk, and a moderate allowance of wine or brandy.

The form of broncho-pneumonia I have thus sketched is not to be confounded with that which is the result of capillary embolia of the pulmonary arteries, although there is this affinity between them, that both are set up by offending matter brought to the lung-tissues by the circulating blood.

The importance of recognising this form of broncho-pneumo-

nia will be admitted when its bearings upon childbed mortality are considered. In some statistical statements I have noticed that certain kinds of death are excluded, on the presumption that labour had nothing to do with the fatal result. Bronchitis and pneumonia are thus treated, although to the informed critic the deaths from these causes may be as plainly traceable to the puerperal process as are the deaths from peritonitis.

It is by the complication of this form of pneumonic irritation that I account for the fatal acceleration of phthisis after labour. —*Transactions of the Obstetrical Society of London for* 1862.—*Edinburgh Medical Journal, June* 1863, *p.* 1135.

102.—THE USE OF WIRE LOOPS. HORSE-SHOE WIRES, ETC., FOR CORRECTING ANTI- AND RETRO-VERSION, OBLIQUITY AND PROLAPSE OF THE UNIMPREGNATED UTERUS.

By Dr. Charles Clay, Manchester.

(Abstract of a paper read before the Obstetrical Society of London.)

The author, in this paper, endeavours to point out the positive injury done by the use of the generality of pessaries, particularly the old class, which, on account of their cheapness, are still sanctioned by the profession. Improved stem pessaries are shown to be so expensive as to be little applicable to the extent of the evil for which they are proposed. In order to meet this difficulty, the author proposes a new and very simple series of instruments suitable for various malpositions of the uterus, ante- and retro-version, obliquity, and prolapse, and at a cost so extremely small as to favour their general application. These instruments are made of medium-sized copper wire, bent and soldered in a convenient form, and tinned.

Dr. Graily Hewitt believed that in the majority of cases of retroflexion of the uterus a mechanical treatment was not applicable; but that in a few cases, on the other hand, such mechanical treatment was required, and in which a cure of the distortion was possible. He had been in the habit of using an instrument, with the results of the action of which he was perfectly satisfied. It consisted of a stem of ivory the length of the uterine cavity, and straight; this stem was mounted on a globular air pessary. The air pessary, when distended with air, maintained the stem in the uterus, and prevented it slipping out. The instrument in question was less liable than others, he believed, to injure the uterus.

Dr. Routh said the use of internal pessaries for retroversion was always a hazardous expedient, sometimes giving rise to

serious and even fatal results. Dr. Hewitt's instrument he believed to be very ingeniously contrived; but even this failed sometimes to give relief. Dr. Simpson's was very efficient; but that also produced occasionally serious results. One drawback in this and in Dr. Hewitt's was that the stem in utero was too long, and irritated especially the fundus uteri. This part once inflamed was accompanied with far more distressing as well as severe consequences to health. Moreover, it was chiefly due to this fundal endometritis that retroverted womb gave annoyance at all. In the absence of this fundal inflammation, many patients went about with retroverted wombs without inconvenience. Hence one advantage of using short-stemmed pessaries, by which all further irritation at the fundus was avoided. The reason of this distress to patients was obvious. That part of the uterus was supplied by nerves from the renal plexus, and not the inferior aortic, and was therefore in direct nervous relation with the splanchnic nerves and semi-lunar ganglia superiorly, and with the ovaries (also supplied from the same sources) inferiorly. Hence the greater general discomfort. Moreover, Dr. Simpson's instrument fixed the uterus *in situ*, and so every jerk of the body was felt by the uterus. Dr. Hewitt's instrument was likewise too long in the stem, though this might be remedied; but although it admitted considerable freedom of movement of uterus, it was sometimes forcibly ejected by the uterus, because not always firmly secured inferiorly. To meet these difficulties, he (Dr. Routh) had devised a modification. His instrument could sometimes be borne where others were not tolerated. It consisted of a coiled wire bell-spring, covered with caoutchouc, and at about two inches or less from its upper end separated by a gutta-percha disc from the lower portion. Upon the disc, with the coiled wire within the organ, the uterus rested, while the lower end was secured by tapes or a napkin, from ejection. By means of a sound to which the curve of the retroverted uterus was previously given, and then passed within the coil, it might be easily applied. The spring, once the organ was replaced, would by its elasticity maintain the organ *in situ*, while it would not impede full movement of the uterus with the movements of the body. Of course the instrument should not be used till after all inflammation had subsided, under the use of leeches or other local depletion, aperients, &c. Sometimes the use of sponge tents to reduce the uterine volume, after Dr. Moir's plan, was also of great use as a previous measure.

Dr. GREENHALGH stated that among the patients at St. Bartholomew's Hospital and in private practice he found misplacements of the uterus extremely common, and productive of

considerable distress both in their complicated and occasionally in their uncomplicated forms. In prolapsus and procidentia he strongly recommended the cautious use of a modified Zwanke's pessary, which possessed the advantages of forming a floor upon which the uterus could rest, and took off all tension from the ligamentous supports of the uterus, enabling them to recover their tone; while astringent injections could be thrown into the vagina, with a view of constringing the dilated and relaxed parts forming the floor of the pelvis. In retroversions and retroflexions he had used a great variety of mechanical contrivances, both intra-uterine and vaginal, but he was compelled to admit with little or no benefit. He entirely concurred with most practitioners that all intra-uterine supports should be done away with, on account of the irritation and inflammation thereby occasioned, which had too frequently led to fatal results. The plan he at present pursued in such cases was, first to remove all complications, when possible, by appropriate local and general treatment; and then from time to time to replace the uterus by means of the finger or uterine sound, and in some few cases to introduce sponge tents into the neck of the uterus: thus he had succeeded occasionally in rectifying the faulty position of the uterus, after which, in a small proportion of cases, impregnation had followed.

Dr. Barnes said, in reference to the treatment of retroflexion of the uterus, that he regarded the subject as one of great importance. He had seen severe distress, mental as well as physical, produced by this form of uterine displacement. The treatment was difficult, and not always successful. He had occasionally, by the adaptation of various forms of pessary he had constructed for special cases, however, succeeded in relieving this complaint. With reference to prolapsus uteri, he could not understand how anyone largely engaged in the treatment of uterine disease could ignore the value of pessaries if these were constructed on sound principles. It was important to distinguish the varieties of prolapsus. There was one class which occurred in women who had passed the child-bearing age, in which the prolapsus depended upon atrophy of the uterus and absorption of the fat and other tissues, which in younger women padded the pelvis and helped to keep the pelvic organs *in situ*. Wanting this support, the uterus was apt to fall through under straining from cough or from labour. This form he called prolapsus from senile atrophy. It was so purely a mechanical disorder that it required mechanical means as a substitute for the natural support that was lost. Nothing answered so well here as a pessary. The form he used had a small cup which received the uterine neck; this cup was sup-

ported on a curved stem so small as not in any way to disturb the vagina, which, on the contrary, was able to grasp the stem and almost to support the pessary by itself. The end of the stem was, however, suspended by elastic bands to an abdominal belt. This elastic support enabled the uterus and pessary to move freely, as in the natural condition, under the various movements of the body. This form of pessary he understood had been in use at King's College Hospital. In a vast majority of cases it answered admirably. He had never less than a hundred women under his care wearing this instrument. It gave complete relief, and enabled them to follow even laborious occupations with comfort. In another class of cases occurring during the child-bearing period, and commonly dependent on inflammation or congestion with enlargement of the uterine neck caused by delivery, pessaries were not so useful. It was often found that the prolapsus was cured by removing the uterine engorgement which caused it. But even here there were cases in which the support and rest afforded by the pessary he had described were of essential service in removing the congestion and inflammation. When the uterine neck was prolapsed, the circulation of the blood was mechanically retarded. When the uterus was replaced, the vessels being restored to their natural position, the circulation was freed, congestion and œdema disappeared, the bulk and weight of the organ diminished, and the vagina, being enabled to contract around the stem of the pessary, gradually recovered its tone; and thus the pessary might fairly be said to cure the prolapsus. The value of the stem-pessary in procuring "rest" for the prolapsed uterus, complicated with œdema and engorgement, was, he felt satisfied, not sufficiently appreciated. But the pessary must be well constructed on the principle he had described. The balls, still too often used, which acted only by stretching the vagina and filling the pelvis, only made matters worse, and were the most absurd and mischievous contrivances.

Dr. OLDHAM, being asked by some of the Fellows to give the results of his experience as to the use of pessaries generally, stated that he rejected them; he had tried them all, but had come finally to confine his mechanical treatment to the employment of simple external support by means of a well-arranged pad and bandage, and that only in very bad cases; the internal treatment consisting in the use of the cold douche, and attention to the state of the general health. In very many cases constipation was a troublesome complication. Small doses of aperients were most efficacious; out-door exercise, especially horseback exercise, was most valuable.—*Lancet, Aug.* 25, 1863, *p.* 249.

103.—ON PELVIC HÆMATOCELE.

By Dr. Alfred H. M'Clintock, late Master of the Dublin Lying-in Hospital.

[Dr. M'Clintock in his very able work on Diseases of Women, lately published, applies the term pelvic hematocele to an extravasation of blood into the pelvic cavity, either within the peritoneum, or external to this sac. As the blood has no more particular relation to the uterus than to any other pelvic organ, Dr. M'Clintock thinks it better to use simply this term, pelvic hematocele, and to confine the term uterine hematocele to extravasation of blood into the substance of the uterus. It must always be remembered that though the effusion is spoken of as if it constituted the disease, it is in reality only a symptom or effect of some pre-existing pathological condition.]

The disease is not of extreme rarity, though only recently fully described. Ruysch recorded a *post mortem* examination in 1691, of a woman who died whilst menstruating, where blood was found in the peritoneal cavity; but we stand chiefly indebted for the first full accounts of it to M.M. Recamier, Velpeau, and Bernutz, and within the last 12 years it has attracted much attention, both at home and in France. The hemorrhage may take place within the peritoneum, or external to it, and the intra-peritoneal may be *encysted*, or circumscribed by the adhesions of the peritoneum, or *non-encysted*, the extravasation taking place rapidly, causing a large swelling, and endangering life by the shock or amount of effusion. The *extra-peritoneal*, or *sub-peritoneal* form is less dangerous than the other. Some pathologists, indeed, doubt the occurrence of this latter variety; the majority, however, recognise the two forms, and some even affect to be able to diagnose them during life. Dr. M'Clintock enumerates the sources of the hemorrhage and the symptoms, as follows:—

"The *sources* of the hemorrhage would seem to be various; in the first place, the blood may be discharged from the Fallopian tube, being either an exhalation from its mucous membrane (Trousseau), or coming through this duct from the interior of of the womb. In the latter case it is not necessary that occlusion of the os uteri should exist. Retention of the menses has also led to bursting of the oviduct, and consequent formation of pelvic hematocele. *Secondly*, the blood may come from the ovary itself, at the time of spontaneous ovulation, either in consequence of disease of the organ, or of unusual hyperæmia. Dr. Tilt and Dr. Genouville argue strongly in favour of this source of the hemorrhage, and the latter physician founds upon it a distinction, very useful, I dare

say, in a practical point of view, viz., *catamenial* and *accidental* hematoceles, the former being the more frequent, and more liable to recurrence in the same individual. A modification of this theory has been put forward by M. Gallard, who supposes that very many cases of pelvic hematoceles are due to the pressure of an ovum which had missed the oviduct and dropped into the peritoneum; so that, in fact, they were examples, strictly speaking, of extra-uterine gestation. *Thirdly*, Dr. Puech has drawn attention to laceration or rupture of the utero-ovarian vascular plexus, as a cause of the extravasations of blood. *Fourthly*, the hematocele may be produced by a simple sanguineous exhalation from the peritoneum, thus being in some degree analogous to the disease known by the name of hemorrhagic pleurisy. M. Tardieu has described a few cases which would seem to be of this kind.

"*Lastly*, the intra-peritoneal effusion may be but one of the effects of a general hyper-secretion of blood from the genital organs; a species of hematocele to which M. Bernutz applies the epithet 'metrorrhagic,' and which is accompanied, at the time of its formation, by an excessive menstrual discharge from the vagina. It is important to observe, that pelvic hematocele may be produced under the most opposite conditions, viz., in the complete absence of menstrual discharge, and where this is unnaturally profuse. In the majority of cases that have been put on record, the hemorrhage has come from the ovarian vessels, at the menstrual epoch. The quantity of blood which has been effused in some of the instances was very great. Of this I shall have occasion to mention a striking example."

. . . . . .

"The leading *symptoms* which present themselves after the occurrence of this accident are, hypogastric pain and tenderness with febrile action, succeeding to menstrual derangement, sometimes amenorrhea, but more frequently menorrhagia, preceded, perhaps, by a temporary suppression of the menstrual discharge. A tumour suddenly develops itself in the hypogastric or iliac region, or behind and partly below the neck of the uterus. At first this tumour is soft and fluctuating, but, at a later period, has more firmness. Tenesmus and irritability of the bladder are frequently present also. The character and intensity of the symptoms will mainly depend upon the mode of inception which the disease exhibits. Studied from this point of view, pelvic hematocele may be said to have three forms, or, to speak more correctly, three *modes of invasion*.

"In the *first*, and most severe form, the onset of the symptoms is sudden and overwhelming. The patient is abruptly seized with abdominal pain and rigor, succeeded by utter pros-

tration of strength, cold extremities, pallor of the countenance, which is anxious and pinched; the pulse is rapid, weak, and thready, and the general surface of the body becomes deadly pale. In fact, the patient presents all the symptoms which characterize intense nervous shock, with the addition of violent cramp-like pains in the lower belly. The danger to life, under these circumstances, is imminent. The amount of sanguineous effusion in this class of cases is generally very large, or attended by laceration of some of the pelvic structures.

"*Secondly*, there is a class of cases where the seizure, though plainly marked, is yet unaccompanied by symptoms so alarming or so severe as those just described. More or less rigor, abdominal pains, and faintness are present, but not in such degree as to menace life, or to indicate any immediate danger. We might justly term this an acute invasion, or acute form of the disease; whilst, for the sake of contra-distinction, the former might be called the intense form.

"*Lastly*, there is a sort of chronic form, the symptoms being developed very gradually, and in succession. These are cases where the diagnosis is beset with most difficulty, and there is a great liability of confounding the disease with pelvic abscess, or ovarian tumours. In each of these forms the symptoms I have traced belong to the initiatory stage, and attend upon the extravasating of the blood. It is possible, therefore, as experience has amply proved, for the same case to exhibit two of these groups of symptoms. In case 1, for example, there were, undoubtedly, two attacks, or two successive effusions, the one characterized by chronic, and the other by acute symptoms. In Dr. Madge's case, to which allusion will presently be made, there were also two attacks at an interval of some days; the first attack was an acute one, and in the second attack the symptoms might justly be referred to the first or intense form of invasion. It may be laid down, in a general way, that the ulterior course and symptoms of the disease will take their character from its mode of inception."

On closely analysing the symptoms they are found to be those of peritonitis, more or less acute, of the lower belly; and along with this the rapid development of a tumour behind the uterus, or in the hypogastrium, and commonly in both situations. The peritonitic symptoms are easily enough recognised, and the tumour is generally discoverable on superficial examination, but whether its contents be blood, serum, or pus, cannot be positively determined by the most delicate sense of touch, and hence the importance of close attention to what Dr. M'Clintock calls the *commemorative* signs, and the order of their appearance;

and the use of the exploring needle, may, when it can be used, afford valuable assistance. In the following passage the differential diagnosis is laid down with Dr. M'Clintock's usual clearness and distinctness :—

"The diseases with which it is most apt to be confounded are the following :—

"1. Retroversion of the uterus.
"2. Pelvic cellulitis.
"3. Ovarian tumours.
"4. Extra-uterine gestation, and
"5. Fibrous tumours of the uterus.

"Now let us see what are the most reliable semeiological points of difference between pelvic hematocele and each of these complaints.

"1. The sudden development of the tumour behind the vagina and the general pelvic uneasiness succeeding to this have caused pelvic hematocele to be mistaken for retroversion of the gravid uterus. But the far greater severity of the symptoms in the former complaint, the absence of dysuria and of the signs of pregnancy, and above all, the information derivable from a very cautious use of the uterine sound, should always suffice to guard the practitioner from committing such a fault. If the symptoms at all favour the suspicion of pregnancy, of course the sound should not be employed. As retroversion is the more common accident of the two, the error most likely to happen—and which has happened even in skilful hands—is that of mistaking hematocele for it.

"2. A more excusable error is that of confounding pelvic hematocele with pelvic cellulitis ; and there is sometimes a close resemblance between these complaints. In each of them there are symptoms of local peritonitis, with fever, and the formation of a tumour. Nevertheless there are some important points in the histories of the two cases wherein they differ. Cellulitis, for example, most frequently succeeds to childbed ; the tumour is slow in its formation : is always hard at first, and at a later period may, or may not, become soft ; it is most often situated in one or other iliac region, and very rarely behind the cervix uteri ; and the febrile symptoms always and distinctly precede the marked development of the tumour.

"This is just the description of case in which the commemorative signs must be taken in connection with the physical signs, to ensure accuracy of diagnosis. If the case has been under our observation from the commencement, little or no difficulty will be experienced in recognizing its real nature ; but where it comes

before us for the first time in the chronic stage, and that reliable or particular information as to its previous history is wanting, then, indeed, there may be ample cause for perplexity. MM. Nélaton and Bernutz,—both most experienced observers and very conversant with this disease,—have each, under the circumstances last mentioned, mistaken pelvic abscess for pelvic hematocele. Nélaton punctured the tumour through the posterior wall of the vagina; an immense quantity of pus, not blood, was discharged, and the woman recovered. The other patient died, when an enormous collection of matter was found in the hypogastric and left iliac regions. This had formed a tumour extending up to near the umbilicus.

"3. Ovarian cysts of small size sometimes descend into the retro-uterine pouch of the peritoneum, and may by adhesions or otherwise become confined to this situation so that their dislodgment cannot be easily effected. With this state of things should any active inflammation be set up in the cyst or its immediate vicinity, a practitioner ignorant of the existence of the ovarian tumour, might be greatly puzzled about the true cause of the symptoms. A fluctuating feel in the cyst, and the absence of any hypogastric tumour might assist him to a right conclusion, and a few days' observation would probably remove all doubt. Practically this delay at arriving at a diagnosis could not be productive of harm, as the treatment in either case would be much the same. If it became a matter of importance to solve the question, this could be done at any moment with the assistance of an exploring needle. Professor Braun's experience leads him to regard exploratory puncture as the only absolutely sure means of diagnosing between ovarian tumours and pelvic hematocele.

"It is important to keep in mind, as bearing on the diagnosis, that in nearly every case a tumour is developed behind and below the os uteri, from the blood gravitating down into the pouch of Douglas. It is extremely rare for an ovarian cyst to hold precisely this situation. More generally it is to one side or the other, and tends to displace the uterus downwards, and toward the side of the pelvis opposite to that in which the tumour is developed.

"4. Rupture of the cyst in extra-uterine fœtation is an accident which may be followed by a train of severe pelvic symptoms in no way distinguishable from those of hematocele. The prognosis would be certainly much graver, as rupture of the gravid cyst is almost always followed by death; but beyond this I do not see that failure to discriminate between them would be of any material consequence. As a general rule we might expect more alarming symptoms to supervene on the

giving way of a gravid extra-uterine cyst; and if such symptoms developed themselves in a patient who had previously manifested well marked indications of pregnancy, the highest degree of probability would then exist that the case was one of extra-uterine gestation ending in rupture of the cyst.

"5. One unacquainted with the infinitely varying phases of disease could scarcely think it possible that any confusion of diagnosis could ever arise between fibrous tumours of the uterus and pelvic hematocele. Nevertheless serious difficulty may present itself on this head. M. Bernutz alludes to a case under M. Goupil at the Hotel Dieu, in which the differential diagnosis between fibrous tumour of the uterus and pelvic hematocele could not be established, so many features did the case possess in common with both these diseases. M. Malgaigne, and Professor Stoltz (of Strasburg), have each committed the error of mistaking a pelvic hematocele for a fibrous tumour of the uterus. Malgaigne actually proceeded to remove the supposed fibroid by enucleation, and with this intention made the preliminary incision of the os uteri, when the hematic cyst was opened and the true nature of the case brought to light. The patient died in eighteen days afterwards. It is important to note, that in each of these cases the retro-uterine tumour, caused by the effused blood, presented no exceptional physical character; it was soft and fluctuating as hematocele always is. M. Stoltz's patient also died, and the existence of the hematocele was discovered at the necropsy. So confident was he that she had uterine fibroid, that he made her case the subject of several lectures on the diseases of which she was supposed to be an example. For some time before the acute symptoms seized her, the patient of M. Malgaigne had several attacks of simple metrorrhagia; and this strongly corroborated the idea of a fibrous tumour being seated in the uterus; which tumour, it was supposed, had been the cause of the hemorrhage and of the pelvic peritonitis."

The medical treatment of these cases resolves itself into the treatment of the stage of shock or depression; secondly—that of reaction and inflammation; and thirdly—the chronic stage. Authorities are divided as to the propriety of surgical treatment —that is, as to the puncturing of the cyst; and on this point Dr. M'Clintock says, that with his present impressions he would not be inclined to resort to the trocar, unless urgent symptoms were manifested in consequence of the bulk or mechanical pressure of the tumour, and not even then unless it were in the chronic stage, an opinion in which we fully concur.—*Dublin Quarterly Journal, May* 1863, *p.* 398.

104.—ON ERUPTIVE FEVERS IN PUERPERAL PATIENTS.

By Dr. J. Y. Simpson, Professor of Midwifery in the University of Edinburgh.

[This subject was brought before the Edinburgh Obstetrical Society by Dr. Simpson, in consequence of having been lately called to see, in consultation, two cases of puerperal scarlatina.]

Case 1.—The first patient was a young primipara, who, at a distance from Edinburgh, was confined after a labour of no unusual difficulty, and remained well till the second day after her confinement, when the pulse rose, and she became so delirious that it was thought she was labouring under an attack of puerperal mania. When he (Prof. S.) saw her first on the third day, the delirium had subsided; but a scarlatinal eruption had broken out over the body. The eruption was of a character so indefinite, as to leave some doubt as to whether it might not be due to the rubefacient action of the turpentine stupes that had been freely employed. Next day, on returning to see the patient, he was told that the eruption had disappeared. It reappeared after a time and again disappeared; and came and went in this way for a couple of days till the patient died. She had had scarlatina some years before. This time there was slight sore-throat, but not much; and the diagnosis had been very difficult at first, and the case peculiar, in that the premonitory symptoms seemed rather to point to mania than to any kind of eruptive disease.

Case 2.—In the second case, on the second or third day after the birth of a fourth child, the patient fevered and showed a scarlet eruption all over the face, trunk, and limbs. The tongue and throat were clean; but the pulse was so weak and quick, that he (Prof. S.) had been led to form but a gloomy diagnosis. She had, however, ultimately recovered. Probably all the Fellows had seen such cases; and he would like just to make this remark, which was applicable alike to small-pox, measles, and scarlatina, that when they occurred in a pregnant female they very rarely proved fatal to her; whatever the date of pregnancy might be; or if they did not attack her till ten days or a fortnight had elapsed after her confinement, they were not specially dangerous; but whenever they appear in a woman within six or eight days after her delivery, they are always alarming and very often fatal.

Case 3.—Rather more than a year ago, a lady who had been placed under his care, died very suddenly of measles coming on shortly after delivery. The disease had appeared in one of the children more than a fortnight before the period of her confinement was due, and he had her immediately separated from the family, who were staying about two miles out in the

country, and brought into town, and no kind of direct communication was allowed to take place between the two houses. Her labour, her thirteenth, was effected on a Wednesday, without any notable peculiarity, and she continued well for some days thereafter. But on the Sunday afternoon she had a tremendous rigor, which was succeeded in the evening by a high degree of fever, and during the night by great restlessness. Copious perspiration and a free evacuation next forenoon greatly relieved her; but in the afternoon the rigor returned, succeeded by a high fever, with burning hot skin and rapid pulse. Towards morning the brow became rough and red, and it seemed for a time as if an eruption were about to break out on the face. The pulse came down a little during the forenoon; but the rigor having recurred in the third afternoon, the patient sank and died, fifty-two or fifty-three hours after the occurrence of the first shivering-fit. The post-mortem examination which was made by Dr. Turner, revealed no special local lesion other than those changes which are found in the liver and other glandular organs in patients dying of rapidly destructive fevers. It would, perhaps, have been impossible to say with absolute certainty that this puerpera died of an attack of measles; but at the time of her death, he (Prof. S.) had no doubt as to the nature of her attack, and his opinion was confirmed when, some days afterwards, an eruption of measles appeared on the baby, although it had been kept away from the infected household.

The remarks he had made with regard to scarlatina and measles held good with respect to small-pox also. There were many cases on record where small-pox, having attacked a pregnant woman, had run its course without producing any very alarming symptoms in herself, though it caused the death of her intra-uterine offspring. But when it came on within a short period after delivery had been effected, it was extremely dangerous.

Case 4.—A patient who had been delivered in the Lying-in Hospital last month, had been seized with small-pox seven days after her confinement. There was a distinct vaccination-scar on her arm. There was not a very profuse crop of vesicles; but on the tenth or eleventh day, some petechiæ spots appeared on the chest, which multiplied in number and increased in size till some of them looked like ecchymoses; and on the sixteenth day she died.

With regard to diagnosis, he might remark that it was not always very easy at first sight to determine the nature of the case, when a puerperal woman became the subject of an eruptive fever. He once saw a case along with Dr. Newbigging, where some of the symptoms looked like those of scarlatina, but no eruption whatever could be detected. Some of the

children, however, afterwards became ill, and in them the scarlatina eruption was quite distinct. The case was the more remarkable that a sister of this lady, who had also been recently confined, but who was living in the country, and had no communication with the affected household except through the doctor, was attacked with scarlatina and died also. He (Prof. S.) did not agree with Dr. Ramsbotham is supposing that the poison of the special epidemic fever was retained in the system of a puerperal woman some time before it broke out; he rather believed that it ran in them its usual course. It was difficult to determine the cause of the great fatality of these fevers is such patients; but it was probably due partly to the weakened condition of the system, but still more to the presence at that time in the blood of a quantity of effete material, which was ready to be thrown into a kind of septic destruction whenever the materies morbi was introduced.—*Edinburgh Medical Journal, June* 1863, *p.* 1145.

105.—SORE NIPPLES.

By Dr. William H. Castle, Portsmouth.

[The plan of treatment recommended by Dr. Castle is one very likely to prove successful. In a very obstinate case related by him he says:]

The nipples and their areolæ being fissured, bleeding on the slightest touch, and so painful that the application of the child was dreaded, on account of the torture to which the mother was subjected, I employed a slight coating of the tincturæ benzoin co. to arrest all bleeding, and having carefully dried the parts with a soft muslin handkerchief, I applied a solution of gutta percha, so as to completely surround the nipple and cover all abrasions, giving it three or four coatings, allowing each to dry thoroughly before repeating the application. During the act of suction (only) a boxwood shield, with calf's teat, was used, and in the course of a few days all was well.

I make the solution thus:—Gutta percha tissue, ℥j.; chloroform, ℥iij.; first place the tissue in a bottle, add the chloroform, shake, and it will soon dissolve.

The film rapidly formed by the evaporation of the chloroform is firm, elastic, and harmless, and, should it rub off, is very easily replaced. The almost painless nature of the treatment, the effectual protection from the contact of the air and irritation of the infant's mouth, recommend it strongly to general use. I have also used this solution with great benefit in several minor cases of surgery instead of collodion.—*Medical Times and Gazette, October* 10, 1863, *p*, 396.

106.—ON THE THROMBOSIS AND EMBOLIA OF LYING-IN WOMEN.

By Dr. R. Barnes, Physician to the Royal Maternity Charity; Assistant-Osbtetric Physician to the London Hospital; Lecturer on Midwifery at St. Thomas's Hospital.

The condition of the blood in pregnant and lying-in women, if thoroughly understood, would furnish the key to much of the pathology of child-bed diseases. That fevers, phlegmasia dolens, and eclampsia, are connected with certain departures from the normal conditions of the circulating fluids, will not now, I believe, be contested. But there is one puerperal affection in which the changes wrought in the blood are invested with a peculiarly striking interest. At a period more or less closely approaching delivery, a woman may be seized with fainting, intense pain in one or more limbs, followed by swelling, arrest of pulsation, loss of heat, gangrene, and perhaps death. What are the antecedent conditions that can lead to this sudden catastrophe? A complete answer to this question would, there cannot be a doubt, indicate the means whereby this catastrophe might, in some cases at least, be averted. In all the cases in which the series of events above enumerated have been observed, and which were subjected to post-mortem examination, clots have been found in the main arteries of the limbs affected.

In another class of cases we witness sudden faintness, irregular action of the heart, distressed breathing, quickly increasing collapse, and rapid death. In these cases it is found that the pulmonic circulation is almost exclusively concerned, and clot-obstructions are discovered in the right heart and pulmonary arteries.

What are the causes which can give rise to coagulation of the blood in the living body? Here is a case in which the physician might, perhaps, be entitled to call upon the chemist for assistance. That organic chemistry has of late years made enough of progress to raise the hope of more effective aid to medicine than has hitherto been acquired, may be freely admitted; but in regard to the particular problem now submitted, we must, I fear, be content for a while to rely mainly upon medical observations. In our search for a solution we must steadily accumulate all apposite observations, in order to multiply the elements of comparison. The cases actually on record are not numerous; but it can hardly be doubted that if cases of sudden death in child-bed had been more closely investigated by dissection, the list might have been greatly extended. It is also certain that if attention be steadily directed, under the

light of the few recorded cases, to clinical obstetrics, future experience will be less barren than the past.

The following case is of value as a contribution to the slender mass of facts bearing upon the subject.

Case.—Swelling of right leg after labour; gangrene; death. Mrs. C., the wife of a surgeon, was thirty-one years of age when she was delivered, on the 23rd February, 1854, of her fourth child. She was attended by Dr. Abraham, who described the labour as easy; the placenta came away entire, and the uterus contracted well. She appeared to be going on favourably, suffering, however, much more from after-pains than on previous occasions, until the 2nd of March. The lochial discharge and the secretion of milk continued as usual. She took little nourishment. On March 2nd she was much irritated and excited by the nurse, who did not manage the child properly. She got up in the bed (perhaps was chilled), and was violently agitated. I was sent for late at night, and found her restless, agitated, hysterical, complaining of spasmodic pains in the abdomen. She could bear pressure; it even seemed to relieve her. Pulse 120. She took ten minims of compound spirits of ammonia, twenty minims of sedative liquor of opium, and twenty minims of ether. She complained that this caused a burning pain in the stomach. On the morning of the 3rd Mrs. C. seemed calmer; the pulse seemed more subdued, having fallen to 100; the pain was relieved; the tongue was red at the tip and round the margin, the papillæ in the centre raised, covered with white fur, and moist. She had taken a saline aperient, which acted fairly. On the morning of the 4th she still appeared to be improving; the pulse ranged from 90 to 110 and back again during the day; the pains in the abdomen were less, but still reappeared spasmodically. On the 5th I was sent for hastily at 9 a.m.; the pains had increased; there was great tenderness all over the abdomen, especially in the region of the uterus; considerable tympanitis; pulse 120, feeble; skin moist, warm; tongue as reported on the 3rd; countenance anxious; she felt as if a tight cord were drawn round the abdomen; dyspnœa. At 1 p.m. Dr. Oldham shared with me the anxieties of the case. He agreed that the uterus was enlarged, and that there was probably phlebitic mischief. The patient could still move and extend her legs freely; there was no tenderness in the legs, or in the groins in the neighbourhood of the large vessels; the uterus was inclined towards the left side; there was marked depression. She took a gentle saline aperient, which acted, and liquor cinchonæ, with liquor opii sedativus, every four hours. Nourishment and wine were freely administered.

6th, 9 a.m. The pain in the abdomen was better. She bore

pressure everywhere, except over the uterus; great tympanitis; some dyspnœa; does not seem to have lost ground.

7th. Still tympanitis and dyspnœa; free from pain on pressure over the abdomen, but there is soreness over the uterus, which, however, seems diminished in bulk; some discharge per vaginam to-day; tenderness in right groin, pain as if after cramp in the right calf; can, however, move the leg freely, and there is no swelling. The tympanitis was relieved by an asafœtida enema, which brought away some fæces as well as wind. No pulsation in right posterior tibial artery. At night she had taken some nourishment.

On the 8th, at 9 a.m., there was pain in the region of the uterus, in the calf and ankle of the right leg; there was slight tumefaction in the groin, but no pain. At 10 a.m. Mrs. C. suddenly fainted. She was restored by stimulants. At noon she was seized with the most excruciating pain in the ankle and calf. I think I never beheld suffering so intense. In her agony she implored her husband to cut off her leg, or to let her die. The pulse was 160. The skin was moist and relaxed; tympanitis; liquor opii taken in free doses seemed to exercise no effect. Towards night the intensity of the pain subsided; there was some fulness and pain in the groin; considerable swelling of the ankle, calf, and thigh; still she could bend the knee; on the inner side of the ankle the swelling shows a red blush. At midnight the pulse was 160; there was great prostration, but the intellect was clear. She had taken, with beef tea, wine and liquor cinchonæ up to this time. An asafœtida enema again relieved the tympanitis and dyspnœa. The urine, which all through had been passed freely, although high-coloured and depositing lithates, was still secreted. On the 9th, at 4 p.m., it was found that the leg, between the calf and ankle, was in a state of gangrene. At 9 a.m. the gangrene had plainly extended; she was now sinking, but in perfect possession of her intellect. She died at 11.

No post-mortem examination was made, but the history of this painfully interesting case can leave little doubt as to the cause of the fatal issue. A coagulum had obstructed the right external iliac or the femoral artery. Mortification had ensued as effectually and as rapidly as if the artery had been ligatured.

To avoid, at least, those fallacies which are apt to arise from speculations upon isolated cases, I propose to range together such cognate cases as the scanty leisure at my disposal has enabled me to gather. The history of blood-coagulation in the living body is not all of such recent date as has been sometimes imagined. Drs. Richardson and Cohn justly remark that similar facts and arguments to those which have of late years engaged the attention of the profession were known and dis-

cussed by Vesalius, Lancisi, Morgagni, Kerkringius, Pasta, Gould, Burserius, Templeman, Quaye, Brown, Cullen, Chisholm, Huxham, and others. But, not to disparage ancestral labours, it must be admitted that contemporary authors have, by more accurate observation, given greater precision to our knowledge of the subject. Amongst the writings that more especially deserve study are those of Baron, Paget, Kirkes, Virchow, (1846), Simpson, Richardson, and, lastly, Cohn (1860). The greater part of these writings bear chiefly upon obstructions of the pulmonic circulation and occlusion of the cerebral arteries.

The memoir of Simpson is chiefly valuable as containing the best collection of cases of obstruction in the arteries of the limbs in connection with the puerperal state.

[Dr. Barnes then relates a series of fifteen cases. Five of these are distinguished by a prior complication with rheumatism, a disease which in non-puerperal cases has been frequently found associated with embolia. In one case the symptoms appeared as early as the second day, in another as late as seven weeks after labour. In eight cases the indications of gangrene arose in less than fourteen days.]

In twelve fatal cases death ensued in from eleven days to three months. In two instances recovery took place.

It is clear, from the history of these two cases, and from what is known of the history of aneurism and other forms of arterial obliteration, partial or complete, that a collateral circulation may, under favourable circumstances, be established; or that if gangrene be not averted, the necrosed portion may be thrown off, life being preserved by the sacrifice of a part of the body.

In those cases which are related most circumstantially there appear to be certain premonitory symptoms, whether of the formation of coagula in the heart or of their transport into the arteries. Dyspnœa, syncope, and irregular action of the heart, are mentioned. But in some cases these symptoms have either not occurred or have escaped attention. The earliest condition recorded is pain in the limbs that have been subsequently more overtly attacked. It is especially worthy of recollection for diagnostic purposes that this pain has generally been of the most excruciating kind.

In nine cases special words are used to denote intensity of pain. The same symptom has been observed in non-puerperal cases; and Gaspard and Cruveilhier record that violent pain constantly attended the injections of foreign substances into the arteries, whilst injections into the veins were painless. The pain generally has remitted, and the signs of mortification have appeared. Pulsation has ceased in the arterial trunks leading to the affected limbs; loss of heat and some degree of swelling

have followed, then loss of sensation, then gangrene. In cases complicated with rheumatism signs of cardiac disease have been diagnosed.

[Dr. Barnes then gives another series of fourteen cases, from a comparison of the histories of which the following interesting points in the pathology of the affection are made out.]

1. It is especially noted in six cases that there were clots in the peripheral veins, as the crural, iliac, hypogastric, or uterine; and also that signs of phlebitis or of uterine inflammation preceded, often by long intervals, the symptoms of pulmonary distress.

2. The first or peripheral symptoms arose in from twenty-four hours to three days after labour; the secondary or pulmonic symptoms occurred at various periods, from four days to more than twenty after labour; death occurred in from four to twenty-eight days after labour.

3. In eight cases the death was more or less sudden; in these cases there was great precordial distress, syncope, and dyspnœa.

4. In the cases suddenly fatal it was generally found that not only were the main branches of the pulmonary artery filled with coagula, as well as the smaller ramifications obstructed, but that clots existed in the right heart.

5. In the cases where death was more gradual the symptoms of pneumonia had time to develope themselves.

6. In the gradually fatal cases it was found that the smaller ramifications of the pulmonary artery were obstructed.

It seems reasonable to conclude that the sequence of events in pulmonic embolia is as follows:

1. There is a dyscrasia of the blood immediately proceeding from the puerperal process, which is favourable to the production of clots in the uterine veins and veins of the lower extremities. Imperfect contraction of the uterus, the formation of putrilage in the uterine cavity from the admission of air, which acts upon the blood and serum squeezed out of the vessels and the remains of adherent placenta or of decidua, are often the immediate antecedent conditions of peripheral thrombosis. This process is also favoured by the retardation of the circulation in the veins of the uterus and lower extremities, resulting from pressure. We are, indeed, familiar with tortuosity, and thrombosis of the crural veins in pregnant women.

2. The next step is that of embolia. Portions of the peripheral thrombi, attended, no doubt, in many cases by septic matter derived from the uterus, are carried to the right heart.

If the solid matters be large enough, or the septic or ichorous matters be irritating enough, to cause a violent perturbation of the heart's action, and to act chemically upon the blood-mass, rapid coagulation of blood in the right cavities may ensue, followed by a similar process in the larger pulmonary arteries. In such cases sudden death occurs.

3. But in those cases in which either minute portions of thrombi are taken up from the peripheral veins or where the septic or ichorous matter is less virulent, no clot may form in the right heart, but minute emboli may be carried into the finer divisions of the pulmonary artery, causing lobular pneumonia, ending in slower death, or possibly in recovery.

Pure thrombosis of the venous system, that is, uncomplicated with blood-dyscrasia or fever, is not often fatal. It can only become dangerous when, from some accident, portions of peripheral clots are carried to the heart.

It would, however, be unsafe in the actual state of our clinical experience in this subject, to adopt without reserve, as explaining all cases, the doctrine of Virchow, that arterial-clot obstructions are the result of emboli brought from a distance by the circulating current. As far as careful dissection can show, there seems good reason conclude that obstruction of the pulmonary arteries may arise from primary, sudden, or gradual formation of clots in those vessels themselves.

4. It has been noticed that in many of these cases some mental emotion or sudden exertion has immediately preceded (and has seemed to be the exciting cause of) the cardiac and pulmonic distress. It seems to me that this association may be explained by the temporary retardation of the blood-current which is occasioned, and which offers a momentary facility for the chemical action of the septic or ichorous matter upon the blood. Possibly, also, sudden exertion may favour the detachment of portions of thrombi from the systemic veins.

But whatever be the explanation adopted, it is difficult to avoid the conclusion that in some of the cases known the fatal catastrophe might not have occurred had the patient been kept in a condition of mental and bodily repose.

It would be an unjustifiable trespass upon the time of the Society were I to enter upon speculations concerning the causes of the coagulation of the blood in the order of cases which form the subject of this paper. The question is one still keenly debated by physiological experimentalists and pathologists. I refer to the works of Virchow, Richardson, and Cohn, for information respecting this matter.

The important question of treatment is obviously closely dependent upon that of etiology. Upon this question want of leisure compels me to touch very lightly. Although there are cases to prove that neither the pulmonic nor the systemic forms of thrombosis and embolia are necessarily fatal, yet it must be acknowledged that our main attention should be directed to prophylactic measures. These should begin with the utmost care for securing a healthy condition of the blood during pregnancy. Exercise in the open air, and thorough cleanliness of the whole skin—too much neglected—good diet, and occasional doses of aperient medicine, are the chief measures. During labour care should be taken to ensure the due and regular contraction of the womb, avoiding as much as possible what is called "kneading," which is another name for bruising, the uterus, and the violent and irregular contraction apt to be produced by ergot. I have certainly seen uterine inflammation caused by the action of ergot.

During the puerperal state the point of first importance is to encourage lactation. There is no agent of equal efficacy in maintaining healthy contraction of the uterus, of promoting its regular involution, and thus of averting many puerperal disorders. The next points are to enforce the recumbent position, to remove all causes of mental or bodily disturbance; not to starve the patient, and thus to give activity to the absorption of foul matters, but to supply the circulating fluid with generous materials.

When prophylaxis is at an end, when we have to deal with the present disease, we must continue the same general treatment, adding bark, stimuli, and the mineral acids. Regarding the alkaline character of the blood in most puerperal diseases, and especially the happy results I have long been accustomed to witness from the administration of nitro-hydrochloric acid in typhoid fever and in puerperal fevers, I insist warmly upon this remedy.

If we adopt Dr. Richardson's theory, that ammonia is the agent which keeps the blood in the living body in a fluid state, we should naturally be led to administer ammonia freely, with the view of dissolving the clots in the heart and the obstructing clots in the arteries. But, without entering upon the general argument, I must state that I do not anticipate any advantage from ammonia given for any length of time. Blood contaminated by puerperal process, and especially when affected, as it commonly is in these cases, is already prone enough to acquire the alkaline condition which attends the action of septic matter. I may also add that direct clinical observation leads me to reject

the use of ammonia in these and in analogous puerperal maladies. Ammonia in the blood may be taken as a constant exponent of exhaustion and of the action of poisonous and depressing agents. It seems contrary to all sound therapeutical reasoning to administer more when there is already too much. Besides, I am not aware that we have any satisfactory evidence to show that we possess in ammonia, or in any other substance, the means of exerting a solvent action upon clotted fibrine in the living body.

The successful issue of Mr. Bottomley's case may suggest the expediency of amputation in certain cases of embolia of the extremities. The course, however, of that case appears to have been exceptional. The strictly puerperal affection is primarily and essentially of cardiac origin; the entire mass of circulating blood is empoisoned or degraded; clots are obstructing the main arteries leading to the limbs, at a point, perhaps, much above the seat of gangrene; in most cases no line of demarcation forms. The uselessness of amputating under these conditions has been long recognised. These conditions differ widely from those of senile or inflammatory gangrene, where the obstructions are capillary and strictly local. The case of Dr. Cowan is an apt clinical illustration. Not a drop of blood followed amputation. The patient died next day. There was, in all probability, obstruction of the external or common iliac artery, quite beyond reach of relief by the knife. In Mr. Bottomley's case the general or constitutional symptoms remitted; the patient having survived the first impetus of the disorder, the affection became entirely localized in the leg; a line of demarcation formed, and although there was obstruction of the arterial trunk high up, a sufficient amount of collateral circulation had become established to nourish the stump. So gradual was all this that the amputation was not performed until some months had elapsed.

In post-rheumatic cases, however, the gangrene may be the result of pure embolia, uncomplicated with dangerous blood dyscrasia. Here it is possible that amputation may occasionally be resorted to.

To compass a complete view of the wide subject of thrombosis and embolia, it would be necessary to include the study of those not infrequent cases in which the blood coagulates in the veins of the leg after pregnancy, without giving rise to all that train of symptoms which constitute phlegmasia dolens. These cases are rarely very serious, although important in illustration of the graver varieties of blood-coagulation during life.—*Obstetrical Transactions, Vol.* IV, 1863, *p.* 30.

107.—ON THE BRONCHO-PNEUMONIA OF LYING-IN WOMEN.

By Dr. R. Barnes, Physician to the Royal Maternity Charity; Assistant-Obstetric Physician to the London Hospital; Lecturer on Midwifery at St. Thomas's Hospital.

[The following is appended as a note to the preceding valuable article on thrombosis and embolia, as there is a close relationship between this subject and what may be called puerperal broncho-pneumonia.]

I have long been familiar with the fact that lying-in women are liable to a peculiar form of broncho-pneumonia. It is generally considered that the pulmonary symptoms which arise during childbed are the consequence of violent straining attending the expulsive stage of labour, and of "taking cold" during the exposure sometimes incident to that event. To me this explanation is far from sufficient. As in typhoid fever, so in puerperal fever, the lungs are apt to be involved. In either case the cause is similar. I may here observe that a marked characteristic of typhoid fever is extreme alkalinity of the blood. The urine I have frequently found highly ammoniacal on voiding. A similar condition commonly marks the blood in puerperal fever. On one occasion I observed that the bladder, being partially paralysed, and the urine consequently retained in the intervals of being drawn by the catheter three times a day, the urine decomposed so rapidly in the bladder as to evolve large quantities of ammoniacal gas, which escaped in a stream with a gurgling sound when the catheter was introduced. These circumstances, with others which need not be enumerated, indicate a dyscrasia of the blood which must produce certain irritating effects throughout the body. The diarrhœa of puerperal fever and the diarrhœa which frequently appears in childbed apart from overt fever is the simple effect of the irritation of the intestinal mucous membrane by the septic or other offending matter circulating with the blood. Peritonitis, cellulitis of the limbs, synovitis—all arise in the same way.

Accompanying this diarrhœa, or apart from it, we may have broncho-pneumonia. This, in like manner, is simply the effect of the irritation of the bronchial mucous membrane or parenchyma of the lungs by the same offending matter. In some of these cases the breath of the patient has possessed an odour distinctly resembling that of the lochial discharges. Broncho-pneumonia may, in short, be regarded as a symptom, or a part, of puerperal fever. But in many cases the fever is masked, or so slight that it escapes observation, and the attention is fixed upon the pulmonary symptoms alone.

In these cases there is generally a considerable degree of prostration. The whole or the greater part of the mucous tract of the lungs is involved. The expectoration amounts to bronchorrhœa. Large and fine crepitation are heard in almost every part of the chest. The sputa are sometimes tinged with blood. Depletion is not borne. The most successful treatment consists in the administration of cinchona, senega, or serpentaria, in the form of decoction or infusion, with ammonia, and at a later stage, with nitro-hydrochloric acid, blisters to the chest, good nourishment, in the form of strong beef-tea, eggs, and milk, and a moderate allowance of wine or brandy.

The form of broncho-pneumonia I have thus sketched is not to be confounded with that which is the result of capillary embolia of the pulmonary arteries, although there is this affinity between them, that both are set up by offending matter brought to the lung-tissues by the circulating blood.

The importance of recognising this form of broncho-pneumonia will be admitted when its bearings upon childbed mortality are considered. In some statistical statements I have noticed that certain kinds of death are excluded, on the presumption that labour had nothing to do with the fatal result. Bronchitis and pneumonia are thus treated, although to the informed critic the deaths from these causes may be as plainly traceable to the puerperal process as are the deaths from peritonitis.

It is by the complication of this form of pneumonic irritation that I account for the fatal acceleration of phthisis after labour. —*Obstetrical Transactions, Vol.* IV., *p.* 55.

108.—ON THE NATURE, TREATMENT, ETC., OF PUERPERAL PERITONITIS.

By Joseph Thomas Mitchell, Esq.

[We give the following paper of Mr. Mitchell's, but need hardly say that his practice at the present day would be followed by but few practitioners.

In the winter of 1825, Mr. Mitchell was present at what was then called the "celebrated lecture of Dr. Armstrong on puerperal fever," delivered at the Maze Pond School of Medicine. The treatment he recommended was bleeding to syncope, followed by the administration of large doses of opium, by which all peristaltic action of the bowels would be suspended, and the excessive alarm and consequent irritability of the whole nervous system subdued, at the same time enjoining implicit rest to the patient in the recumbent position, and applying extensive counter-irritation over the whole abdominal surface.

The lecturer was listened to by an immense crowd of practitioners from all parts of London.]

I left the lecture, which occupied two hours in being delivered, with feelings very different from those with which I had gone away from the theatre at Guy's after having heard Dr. Blundell's lecture on the same subject a few years before. On my arrival at home, strange to say, I found an urgent message awaiting me, that my immediate attendance was required on a poor woman who had been delivered two days previously, and who was suffering excruciating pain, and had sent for me several times within the past hour. I went to her immediately, when, to my dismay, I found myself confronted for the first time with the direful enemy which I had so much feared. I immediately put in practice Dr. Armstrong's remedies, and the result was that I had the gratification of seeing my patient snatched from what appeared to be impending death. After the pleasing termination of this case my inordinate fears in having to contend with this disease subsided, and from that time to this I have always adopted the same practice, and with almost the same invariable success.

What is puerperal peritonitis? It is a disease marked by the following symptoms, occurring under the following circumstances. A woman in apparently normal condition of health or otherwise, who may or may not have received some shock or accident, is taken in labour, the process of which is either natural, easy and quick, or lingering and preternatural; it may have required manual or instrumental aid, or it may have been accomplished without either. After delivery, all the attendant circumstances may give hope of a speedy recovery to health and strength, or it may be otherwise; generally, on the second or third day after delivery, she begins to feel pain in the abdomen, slight, perhaps, at first; but from time to time it becomes augmented, as it were, by slight colic or spasmodic action of the intestines, which may be taken for ordinary afterpains; this condition lasts, perhaps, for an hour or two, or even for a day, when suddenly she is seized with a violent spasm in the belly, which is quickly succeeded by a fit of shivering, more or less severe; this ushers in symptoms alarming to the patient and all around her, who become impressed with the belief that death is fast approaching; her countenance has become pale, shrunken, and deeply anxious in its aspect; her extremities cold; her pulse almost uncountable, and scarcely discernible, from quickness and feebleness; by this time the most excruciating, permanent pain is felt over the whole internal abdominal surface, which is greatly augmented by the slightest pressure made externally, and this all present without retention of urine

or other accountable cause; indeed, she is in a condition not unlike that which speedily follows the taking of corrosive mineral poison, except that there need be no vomiting, and from which, if she be not speedily relieved, will be followed by swelling and tenderness of the abdomen, produced by the rapid outpouring of serum, coagulable lymph, and pus, which, in some instances, is even attended by sloughing of small patches in the membrane, as has been seen in post-mortem examinations.

The question then is, have we any means to prevent such results? My answer is, we have none except what are most active in their operation, and that require to be applied with the earliest and greatest promptitude. Under these impressions, in order that I might be ready promptly to apply my remedies when such emergencies may occur, my rule has always been to instruct the parish midwives, and others in attendance on lying-in women, immediately to send for me whenever any symptoms might appear, such as I have described as characteristic of the approach of this disease. This rule has often given me unnecessary trouble, when no real cause for alarm has existed, but it has enabled me, promptly to apply my remedies where it has.

Then, what have been these remedies? Bleeding to a greater or less extent, generally adopted but once, yet in some instances, twice, and in some few cases even thrice, followed by the administration of full, almost poisonous, doses of opium, and then extensively irritating the whole abdominal surface by fomentations of hot water and turpentine, or by the application of large sinapisms; at the same time enjoining the strictest quiet, and confining the patient in the horizontal position on her back, even when called on to pass her urine, taking care to prevent all action of the bowels, during even four or five days, if necessary, and then to relieve them only by an injection of gruel and turpentine, and not by any purgative given by the mouth. Indeed, I urgently warn every practitioner against administering any purgative by the mouth during the continuation of any symptoms of this affection.

Perhaps many will exclaim—"What! bleed a women in whom life appears almost already extinguished, as is evidenced by the depressed condition of the nervous system, and by all the other attendant symptoms! And how can you bleed a woman almost pulseless, with cold extremities, and apparently sinking? A vein may be opened, but no blood can flow." Under such circumstances the operation may appear to be difficult; but by preliminary preparation the difficulty will be removed. Let the hands and the feet of the patient be placed in water, as hot as can be borne, for a short time; then tie up the arm, when the veins at the bend will be found to be distended, and easy to be

opened. At first the blood will flow slowly, but very soon, as the operation proceeds, and the engorged congested vessels of the inflamed membrane become relieved, the blood will flow freely; the heart, which, under the direction of the alarmed nervous system, had almost ceased to push the blood forwards to the diseased surface, where a destructive process had begun, recovers its action, contracts more firmly and normally, and the blood becomes freely and equally circulated throughout the whole system, and the circulation being restored, the blood is made to flow "plæno-vivo," until, as the overloaded vessels of the affected part become more relieved, the excruciating pains in the abdomen are lessened, perhaps entirely removed, never to return; when, by producing almost narcotism and active counter-irritation, the violent action commenced in the peritoneum, and which must, if left unchecked, become speedily disorganizing, is directed to the vessels of the skin, and nature, relieved from her alarm, gradually recoveres her normal action.

I am aware that, in advocating this plan of treatment, I am placing myself at issue with the generally received opinions of the present day. I expect to be told that disease is always of asthenic origin, and that an asthenic condition is the cause of its perpetuation, and that the cure is only to be hoped for in the adoption of repleting and stimulating, rather than depleting, means; but my answer is in the result of the practice.

Of the four fatal cases among the twenty-seven cases treated, the first that died was one to which a physician-accoucheur, then of repute, was called in during the progress of labour, in consequence of a large thrombus having formed high up in the vagina, by the giving way of a large varicose vein in labour, when the tumour prevented the descent of the child's head. In that case I wished to divide the tumour by a longitudinal incision, made parallel to the axis of the passage, thereby to allow the blood to escape, and then to let the head pass over it by the natural expulsive efforts of the uterus, as there was ample space in the bony canal to allow of transit through it; but to this the friends of the patient objected, and then I sent for this gentleman, who also objected to my suggestion, and he immediately applied the forceps to the head, and delivered hastily, by dragging it violently over the tumour, which, of course, burst under the pressure, and by which the vagina was much lacerated, even to the vulva. Peritonitis followed, and death.

In the second case death was accelerated, if not caused, by the injudicious administration of a full dose of castor-oil, given, also contrary to my approbation, by another eminent physician-accoucheur, who was called in on the second day of treatment, and on the fifth from the delivery, when all the

acute symptoms had been subdued and the case was progressing favourably; the action of the purgative revived the mischief, and she died on the ninth day.

The third was a woman in most impoverished circumstances, who was suffering under great deprivations, who was seized with labour at the seventh month of gestation; she was evidently suffering from peritonitis when labour began, and was convulsed in labour; she died on the fifth day.

The last was a similar case of six months' gestation, where there was a placenta presentation, requiring turning, which, from the urgency of the hemorrhage, was effected hastily, and was followed by peritonitis, and she died. This woman was not bled.

Now, how do free, sudden abstraction of blood, the administration of opium in large doses, and the application of extensive counter-irritants on the skin, affect such deranged phenomena as are present at the onset of puerperal peritonitis, such as I have described, indicating such universal depression of the nervous system and almost paralysed condition of the circulating? By the mere sudden, temporary, but universal, relaxation produced on the ordinarily normally distended condition of the blood-vessels generally, acting mechanically and specially in relieving the congested or distended condition of the particular vessels of the part affected, the condition varying in degree, according to the nature of the structure affected, found in every part suffering under inflammation before disorganization has actually commenced, and becomes more or less destructive in its consequences; according also, to the peculiarities of the structure. It is rapidly so when it occurs in the serous membranes lining the great cavities of the body. And this relief given to the congested vessels by the bleeding is perpetuated by the sedative effects of the opium, assisted by the deriving influence of the artificial erysipelas set up on the whole abdominal skin by the application of the hot-water and turpentine fomentations.

But with the treatment which I have commended I do not deem it necessary to starve the patient, whose powers I sustain with light, nutritious food, as beef-tea, milk, and farinaceous food, and, perhaps, even with wine, in moderate quantities. Yet in no instance did I ever give wine or other stimulant until many hours after all the acute symptoms, of which, I esteem the acute pain as the chief, had subsided.

Those who universally condemn depletion by bleeding, do it under the conviction, that, as the system is thereby deprived of so much of its necessary pabulum of life, it ought never to be wasted; but retained, to sustain it, and the destructive tendency of disease; and, also, because they deny that, by bleeding, the active disease is ever suspended. From these

opinions I differ. Moreover, nature, in her own operations shows us to what extent loss of blood may be borne, not only with impunity, but with advantage, as in extensive epistaxis when apoplexy is threatened ; in hæmatemesis where gastritis exists, or in hæmacatharsis during an attack of enteritis, as well as by the rapid recoveries often made by women, after deliveries, in which they had suffered immense losses of blood.

The twenty-three cases of recovery, here alluded to, out of twenty-seven cases treated, are proofs of the safety of the practice of bleeding when adopted to a moderate extent, not one of which suffered afterwards, as from an anæmic state, or had her recovery retarded thereby. A near relative was one of the subjects of this treatment. She was bled twice within twelve hours ; first to sixteen ounces, and secondly to six ounces ; she recovered well, and within sixteen years of the occurrence was afterwards delivered of eight living, healthy children, and she is now a healthy woman of fifty-nine years of age.—*Obstetrical Transactions, Vol.* IV., *p.* 96.

109.—ON THE STATE OF THE INTERNAL SURFACE OF THE UTERUS AFTER DELIVERY.

By Dr. J. Matthews Duncan, Honorary Fellow of the Obstetrical Society of London.

[The old doctrine, so connected with the name of Cruveilhier is, it is almost needless to say, that the body of the uterus is everywhere laid bare after delivery or miscarriage.]

The very few remarks I wish to make may be conveniently arranged according to the topics ; first, regarding the internal surface of the body of the uterus, exclusive of the placental site ; second, the placental site ; and third, the reproduction of uterine mucous membrane after delivery or during pregnancy. The condition of the internal surface of the cervical portion of the uterus may be left entirely out of this note, for no great difference of opinion has ever existed regarding it.

1. *The internal surface of the body of the uterus, exclusive of the placental site.*

I have elsewhere taken pains to show that the modern errors regarding the condition of this part, as taught by Cruveilhier, and others, are departures from the older and truer teaching of the great William Hunter. I have shown that the anatomy of the decidua truly given and carefully described by William Hunter was supplanted by a jumble of errors introduced into science by his brother John. In like manner, William Hunter's views as to the condition of the mucous membranes of the

uterus after delivery have been lost sight of, and it only remains for us now to restore them to their proper place. On this subject he says, in his 'Anatomical Description of the Human Gravid Uterus,' "This membrane (the decidua) is an efflorescence of the internal coat of the uterus itself, and is, therefore, shed as often as a woman bears a child or suffers a miscarriage. It is of considerable thickness, *and one stratum of it is always left upon the uterus after delivery*, most of which dissolves and comes away with the lochia."

My own observations support the conclusion of William Hunter, and appear to me further to justify the statement that at no time during pregnancy or after it is the decidua thrown off in mass or the muscular tissue denuded. In the course of pregnancy, as the superficial layers of the decidua gradually become obsolete and caducous, new growth of mucous membrane takes place beneath the old; and at whatever time miscarriage may take place, the separated decidua leaves always a layer covering the internal surface of the uterus.

The observations of the late Dr. Chisholm, of Virchow, of Priestley, and of M. Robin, confute the unphilosophical views of Cruveilhier and his followers, and support those just referred to as having been long ago published by William Hunter, but subsequently forgotten.

A thesis of M. Colin is mentioned by Priestley, and cited by Robin, as enunciating views identical with those supported in this note, but I have not been fortunate enough to see it.

2. *The placental site.*

It is natural to suppose that this part of the interior of the uterus will, more than any other, be completely denuded of mucous structures; for here we have, not merely the supposed throwing off of old decidual membrane, but the separation of the highly vascular placenta, suddenly and in the midst of its functions, leaving a bleeding surface behind. I have been represented as holding that the persistence of a layer of mucous membrane at this part was less probable than its persistence over the rest of the uterine surface. Now, in my original paper on this subject, published in October, 1853, I assert that after delivery the persistent layer of mucous membrane "is found, as in early pregnancy, to be thicker at the site of the insertion of the placenta than elsewhere." It was, indeed, the examination of this part, and especially the observation of sinuses still opening upon its surface after the thick mucous membrane was easily and plainly seen, that first strongly attracted my attention to the subject; for this observation made it plain that the old theory of Cruveilhier, and, I may now add, the young theory of Heschl, were fundamentally erroneous, their view being that a new mucous membrane was developed over the denuded uterine

surfaces, and, therefore, covering up the sinuses, the demonstration of whose open condition made the view untenable.

Since my first investigations I have had opportunities of carefully examining the uterine surface at the placental site after natural labour and in a suicide near the full time, in whom I artificially separated the organ with a view to this question. In some of these studies I had the valued assistance of the late Mr. Barlow, of this town, who, by microscopic examinations, made out the existence of structures such as have more recently been fully described by Priestley, and especially by Robin. This last observer has now arrived at the same conclusions as I had previously announced. In his elaborate paper, published in the 'Memoirs of the Imperial Academy of Medicine,' he says that of the utero-placental area of the mucous membrane of the uterus there is only a small, superficial portion caducous, the greater part remaining permanently adherent to the uterus, and that this persisting portion has a thickness increasing in proportion to the contraction of the muscular layer of the organ.

3. *The reproduction of uterine mucous membrane after delivery or during pregnancy.*

M. Robin and Dr. Priestley believe that, in the course of pregnancy, after its fourth month has passed, the whole mucous membrane of the uterus, or the whole decidua, with the exception of the serotina, is thrown off from the subjacent muscular layer, being displaced by a new mucous lamina which at that time springs up beneath the old decidua. Up till 1858 Robin believed that a somewhat similar series of changes occurred after delivery at the site of the serotina or old site of the placenta, but now he holds that the layer of serotina persisting after delivery is, in no sense, caducous, and continues attached to the muscular uterine wall.

The part of M. Robin's views last described, as only recently adopted by him, coincides with what I have ever maintained. From all the other opinions of Robin and Priestley on this point I dissent. Their published observations do not seem to me to afford any good grounds for their statements. Every one admits that a great amount of effete decidual structures is observed outside the chorion in advanced pregnancy, and it is only natural to suppose that, as superficial layers are shed or exfoliated, new structures are springing up to replace them. In this way it may be quite true that the old decidua is removed and a new mucous membrane appears. But in this sense the same may be asserted of the muscular layer of the uterus after delivery; the old has disappeared by absorption, and new muscular structures have replaced it; yet, after all, it

is the same muscular layer. This is not the meaning of M. Robin and Dr. Priestley. They adhere to the old and, I believe, erroneous notion that the whole uterine mucous membrane of early pregnancy is deciduous or caducous, and is replaced by an entirely new membrane, the peculiar difference of their opinion from the older notions being this, namely, that while, according to the latter, it was at delivery that the decidua was torn off or thrown off, leaving the muscular structure denuded, according to the former it is about the middle of pregnancy that the decidua is separated and a new mucous membrane begins to be regenerated. This implies that at some time the muscular layer is laid bare, and produces on its surface a mucous tissue heterologous to it. On theoretical grounds this view appears to be untenable, and my observations in cases of miscarriage lend no support to it.

Dr. Priestley said that he would not long occupy the time of the Society, but as Dr. Matthews Duncan had made frequent reference to his published observations, he craved permission to say a few words. The chief questions at issue were, 1st, What is the condition of the interior of the uterus after delivery? and 2nd, By what process does the interior of the uterus regain the condition of the unimpregnated organ? In reference to the first point, Dr. Priestley had no hesitation in expressing his conviction that the sagacious opinion of William Hunter, so ably discussed and confirmed by the researches of Dr. Duncan, was the correct one. The plane of muscular fibres lying next the cavity of the uterus was not denuded in the way described by M. Cruveilhier, and the interior of the uterus was only so far analogous to a stump after amputation, that large divided vessels were found open at the placental spot. In reference to the second point, he differed from Dr. Duncan so far that he believed the chief portion of the laminæ lying next the uterine cavity after delivery not to be composed of regularly formed epithelial particles, such as form mucous membranes generally, but to consist of irregular cells, fibro-cellular structures, and fat granules, identical with those found in the decidua in the latter periods of pregnancy. Shreds of these laminæ floated out when the preparation was placed in water, and they were gradually shed off as lochia during the patient's convalescence. Beneath these, however, the microscopic observer found small and regular epithelial particles, not mature at the time of delivery, but embryonic in character, and probably the progeny of the original mucous membrane. The epithelial cells forming the mucous membrane of the uterus at the time of conception were, no doubt, transformed into the fibro-cellular structures of the decidua, and hence the reproduction from the basement

membrane, during the latter half of pregnancy, of those cell-particles which were intended to replace the original mucous membrane.—*Obstetrical Transactions, Vol.* IV, *p.* 107.

110.—A NEW METHOD OF EXTIRPATING LARGE POLYPI.

Professor Simon, of Rostock, suggests a method of overcoming the difficulty of extirpating very large fibrous uterine polypi when fixed in the pelvis so that neither by finger nor instrument is it possible to reach the pedicle. The necessary condition, he says, of the excision of such tumours, is the diminution of their circumference, for it is only thus that room can be gained to reach the stalk. His method consists in making a transverse incision of the body of the polypus, especially of the unyielding part of the capsule, until the tumour, by means of traction exerted on its axis or point, is drawn out longitudinally, and so thinned that it becomes easy by finger and instruments to reach the stalk. This lengthening of a polypus is effected at the expense of its thickness, and is brought about through that property of the fibres of fibrous polypi by which they are enabled to separate from each other in large bundles as soon as the unyielding investment (the hypertrophied mucous membrane, especially the hypertrophied sub-mucous cellular tissue of the uterus) is divided to a considerable extent. In performing the operation, the point of the polypus is seized by the vulsellum, drawn down, and then free and deep transverse cuts are made in the body of the tumour by a pair of long and sharp-pointed Cooper's scissors. By these incisions the capsule and the subjacent adherent fibrous layers are divided. Generally upon this, the body of the polypus may be easily drawn out and thinned. The Professor relates three cases in which he has resorted to this proceeding with advantage. —*London Medical Journal, May* 1863, *p.* 611.

111.—CASE OF POLYCYSTIC DISEASE OF THE RIGHT OVARY; WITH ULCERATION THROUGH THE WALLS OF THE BLADDER.

Under the care of Henry Smith, Esq., at King's College Hospital.

[The patient was thirty-eight, married, and the mother of five children. She stated that she first noticed a lump in her groin five years ago. This increased gradually, until ten months ago, when an opening was made into the tumour by a surgeon, about an inch above the navel, and a quantity of green matter came away. Subsequently, another puncture was made lower down, and this was followed by a permanent opening. On

admission, there was found a hard, well-defined mass, of considerable size, occupying the centre and right side of the abdomen. The opening discharged a fluid composed partly of ordinary ovarian fluid and pus. There seemed to be a line of demarcation on the right side between two portions of the tumour. The general condition was very bad. She was wretchedly thin and emaciated, and suffered continual pain in the abdomen. The tumour was diagnosed to be ovarian, probably polycystic, and of a semi-solid character. Her health was considerably improved by rest in the house and abundant nourishment, before any operative procedure was attempted.]

At two p.m., on June 27th, the patient was brought into the theatre, the rectum and bladder having previously been thoroughly emptied by an enema and the use of the catheter, and the operation was performed by Mr. Henry Smith in the following way:—An incision was made about an inch above the umbilicus, carried down to its left and then into the mesial line to the extent of four inches. After the peritoneum had been slit up the tumour was partly exposed, but it was covered for three-fourths of its surface by, and adherent to, the omentum. This with some difficulty was separated by the fingers, and the upper and lateral surfaces of the mass were then fairly exposed. A large trocar was now thrust into it, but nothing came away, and on removing the instrument its extremity was found to contain some thick gelatinous fluid. It being evident, therefore, that the bulk of the mass could not be lessened, Mr. Smith, at the suggestion of Mr. Fergusson, lengthened the incision in the abdomen, and was able to get his hands behind the tumour, when it was found to be adherent on all parts to the intestines and mesentery. At this stage it looked as though the proceeding must be abandoned, but by the cautious use of the knife here and there, and by steady manipulation, the adhesions were entirely and safely broken down; the pedicle, which was not broad, was then found, the clamp was readily applied, and the tumour was removed. Only two ligatures were required for bleeding vessels, and the patient was placed in bed in very fair condition considering the prolonged and formidable operation which she had undergone. The tumour when removed was about the size of an adult head, and was composed of several cysts, both large and small: in the latter was the ordinary thin serous fluid, but the contents of the former consisted of a thick gelatinous fluid, which would not flow out when an incision was made; so that, practically speaking, the tumour was solid.

28th. Ten a.m.: The patient has had but little shock after the operation, although she has vomited a great deal. She has

dozed much during the night. A suppository of opium and hyoscyamus was administered soon after the operation, and at night she was ordered opium and creasote, and to take ice freely. As the sickness still persists when she takes anything, Mr. Smith ordered the discontinuance of all nourishment by the mouth, and instead, an enema of beef-tea and brandy every two hours.—Ten p.m. : There has been a free oozing of blood during the day by the side of the pedicle ; the belly has become tumid and very painful, especially on the right side ; pulse 140. Continue creasote and opium pills.

29th. Sickness has quite subsided, and she is able to take beef-tea ; oozing of blood and pain have diminished ; bowels open ; countenance cheerful. She has taken six ounces of wine and some egg flip. Repeat opium pill.

30th. Passed a comfortable night. Pulse 128 ; less pain in abdomen ; tongue clean ; countenance cheerful. Continue the same.

July 1st. She was not so well last evening, felt lower, and inclined to vomit ; she therefore had an injection of beef-tea, and took three grains of opium during the night. She is better this morning, but the pulse is 140, and the tongue dry. Dressings removed to-day ; wound looking well, and healing. Still some oozing from the side of the clamp. As the bowels have not been open for forty-eight hours, she is to have an enema of gruel and castor oil.

2nd. She has been suffering much pain since the injection, which caused free purging. There is more swelling of the belly, with pain, and a wiriness about the pulse ; tongue slightly red. To have the citrate-of-ammonia mixture, with five mimims each of tincture of opium and chloric ether, every four hours.

3rd. She is better. There is much less pain and distension ; pulse less wiry ; wound discharging freely. She is taking wine and beef-tea. Clamp removed.

4th. The patient has passed no urine during the last twenty-four hours, and there is a decidedly urinous smell about the discharge from the wound, which is thin and copious. On introducing a catheter, only an ounce of urine was drawn off ; the instrument was therefore tied in the bladder, and the patient ordered to be turned on her side.

5th. Still a great deal of urinous discharge from the wound. The abdomen, however, is much less swollen and painful. Patient takes nourishment well.

6th. It is quite evident that there must be an opening in the bladder, as the catheter became blocked last evening, and then there was a profuse clear discharge of urine through the wound. Since the catheter has been cleaned and replaced,

there has been an abundant flow through it of limpid urine, and much less through the wound.

After this diagnosis had been made, there was little or no hope of her recovery entertained, although for a day or two this woman rallied wonderfully. The abdomen became flat and painless, the wound put on a healthy granulating appearance, and the discharge was more healthy and more decidedly purulent; but the pulse continued very rapid, and she got a severe attack of aphtha, and about a week before death an abscess appeared on the back of each wrist. She, nevertheless, took nourishment well, and lingered on until the 17th, when she died.

Post-mortem examination.—The wound was partially healed for three-fourths of its extent. On laying the cavity of the abdomen fairly open, the bladder was found to have a large ulcerated opening at its superior and posterior part, large enough to admit two fingers. The intestines immediately around the site of the tumour were matter together, and at other parts slightly adherent. The left ovary was found to be the seat of disease similar to that in the one removed, and was the size of the fist. The right ureter was dilated, but sound. Scarcely a trace of the pedicle of the removed tumour could be noticed. Deposits of pus were found between the two layers of peritoneum over the intestines. There were also deposits in the extensor tendons of either wrist. Both the pleuræ and pericardium were roughened with lymph.

In some remarks which Mr. Henry Smith made after the operation, he stated that it was undertaken solely as a matter of necessity, as it was quite clear that the patient must die sooner or later after spending a short interval in pain and misery. With regard to the operation itself, those present had been able to see what formidable difficulties he had to contend with. Nevertheless, it had been satisfactorily concluded. It was true that, having considered the matter fully, he had prepared himself for the possibility of great difficulties in the proceeding. It was the opinion of some of his colleagues that considerable adhesions would be found to exist, and there was reason to expect this as the patient had suffered such constant pain about the tumour, and there had been a continual irritating discharge, which would be liable to set up inflammation and subsequent adhesions. It was well known, however, that an extreme degree of adhesion, especially between the tumour and the abdominal wall, did not contraindicate the operation, nor render it more fatal. In this case there was much less adhesion to the abdominal wall than he expected; but unfortunately the tumour was adherent to much more important parts

—viz., the omentum and intestines, and indeed it was necessary to use the utmost caution to prevent injury to the latter.—*Lancet, August* 15, 1863, *p.* 188.

112.—ON A CASE OF RETAINED MENSES OF TWO YEARS DURATION, CAUSED BY ATRESIA VAGINA; PUNCTURE OF THE UTERUS BY THE RECTUM: RECOVERY.

By I. Baker Brown, Esq., Senior Surgeon to the London Surgical Home.

In cases of deficiency or total absence of the vagina in the young female, if not associated with any arrest of development of the uterine organs, it is probable that pain and other symptoms of a desire to menstruate may recur monthly, and yet pass off without any great inconvenience. There is the liability, however, of the accumulation of the menstrual fluid, which goes on augmenting at each period, undergoing inspissation, and ultimately giving rise to painful and continued distension of the uterus, which at last demands surgical interference. Such cases are undoubtedly rare, and where attempts have been made to afford relief by puncture or otherwise, in the majority an untoward result has taken place. An exceptional case is related by Dr. Meigs, in his work on 'Woman: her Diseases and Remedies' (Philadelphia, 1859). In this instance there was an absence of the vagina in a girl of sixteen, who had the usual symptoms of menstruation every month, attended with much suffering. The vagina was one inch long, and ended in a *cul de sac.* A hard and solid tumour could be felt jutting upwards in the lower part of the belly like the womb of a woman at quickening. This tumour could be felt also in the rectum; and believing at first that it arose from distension of the womb by the retained menses, an attempt was made to push a small trocar and canula through the rectum quite into the centre of the organ; a few drops of blood only came away. No bad effects ensued, and Dr. Meigs was uncertain as to the true nature of the tumour; at any rate the girl continued in good health, but subject to periodical pains as before, although the uterus did not further increase in size.

On reading Dr. Meigs' description of his case I cannot help thinking that the tumour was a distended uterus, and that had he used a larger trocar and canula, the result might have been more positive.

In the 'North American Medico-Chirurgical Review' for July, 1861, is an instance of "occlusion of the uterus," quoted from the 'St. Louis Medical and Surgical Journal' of the previous January, wherein the patient had suffered for two months considerable anguish, without menstruation, though

with no other sign of pregnancy. By the finger in the rectum a tumour could be felt; a vaginal examination revealed in a shortened vagina. Next day, detecting fluctuation in the tumour, Dr. M. M. Pallen, of St. Louis, introduced a curved trocar into the rectum, and plunged it through the supposed os uteri, and a quart or more of menstrual fluid gushed out, relieving the patient. It is not stated whether this was followed by any bad consequence; if it had been, I have no doubt it would have been mentioned.

A third instance is published in the 'Medical Times' of August 17th, 1861, of a girl, aged eighteen, with congenital deficiency of the vagina, admitted into Guy's Hospital under the care of Dr. Hicks. Puncture of the rectum was effectual, and the patient recovered excellently.

Cases of retention of the menses with congenital absence of the vagina must be extremely rare, as so few indeed are placed upon record. The general opinion prevails that a fatal result almost invariably ensues in such cases when the uterus is punctured through the rectum. Whether this is correct or not, the results of experience can alone decide. Dupuytren has opened the closed womb through the vagina in several cases, and the inflammatory symptoms were so severe after the operation that he finally decided upon entirely giving it up, "and rather to allow the patient to die more quietly and slowly than to speedily hasten her death by the operation, which," he states, "always results from inflammation of the womb, and which is the more violent in proportion to its distension." Since his time the distended womb has been punctured on many occasions through the vagina without the terrible effects witnessed by him.

In 1860 I published a case in the 'Lancet' (vol. i, 1860, p. 465) of retained menses in a girl aged sixteen, the result of imperforate os uteri. She had never menstruated, but every month she suffered great pain in the belly and back, lasting for a period varying from a few hours to a few days. The vagina ended in a *cul de sac*, but the lips of the os uteri could be obscurely made out, covered, as it were, by the lining membrane of the vagina. An enlarged fluctuating uterus could be felt through the rectum. I punctured the membrane through the vagina, and nearly a pint of treacly fluid flowed out. An untoward result occurred on the third day, from local peritonitis.

Dr. Simpson, of Edinburgh, has operated for retained menses in a case of occlusion of the vagina, the result of adhesion and contraction from sloughing, following a previous difficult labour. A large quantity of fluid was evacuated, and a small amount of

irritative fever followed this simple operation of puncture ('Obstetrical Memoirs,' vol. i, p. 292).

Several cases have been collected by Dr. Ramsbotham in which this same fever ended fatally ('Medical Gazette,' Oct. 16, p. 327).

In none of these, however, had the operation been required by the rectum; in the following case the operation was followed by pain off and on for a few days, the result more of slow contraction of the uterus than of any other cause. And to some extent pain was due to the efforts at natural menstruation, which ended in the appearance of healthy catamenia on the evening of the fourth day of the operation and during the fifth day. Pain also preceded the second menstruation for some days. There was no irritative fever throughout, and the general result I look upon as extremely satisfactory.

Case (reported from the Case-book).—M. D., aged fifteen, single, admitted into the London Surgical Home, November 13th, 1861, from Yorkshire.

History.—Has always enjoyed good health until about two years ago, when she began to suffer much pain at every monthly period unaccompanied by any show of menses. She was treated medically for it, but was not examined till a year ago, when Dr. Wright, of Malton, examined her, and described the nature of her complaint, but did nothing for her. She has been under the care of Mr. Teale, of Leeds, who tried to make a vagina, but failed in consequence of the excessively small amount of tissue to work upon. Ever since she has been suffering constant pain from the distended uterus, which has increased much in size.

On admission.—She is a fine, stout, well-developed girl, but with an expression of great suffering in her face; the uterus can be felt externally as large as a four months' gravid organ and on introducing the finger into the rectum it can be felt bulging and prominent, and something like an os can be distinguished. There are no signs of a vagina, but all the other external parts are perfect.

November 21st. In the presence of M. Nelaton, from Paris, Dr. Esteva, his assistant, Dr. Gueneau de Mussey, and several other medical gentlemen, Mr. Brown tapped the uterus through the rectum with a curved trocar and canula, which he introduced as nearly as possible where he thought he could feel the os. About an ounce of treacle-like fluid came away immediately; the canula was left in.

Ten p.m. There has been a good deal of pain, for which one grain of opium was ordered. A quantity of the thick menstrual fluid has come away.

[The case progressed favourably, the menstrual discharge coming on profusely on the 23rd, 24th, and 25th November. On the 4th December, a fortnight after the operation, the canula was removed.]

25th. Mr. Brown examined the rectum with the speculum, but could observe nothing beyond a slight depression, through which, however, he could not introduce any probe or instrument into the uterus. He determined to wait and see, in the event of the uterus becoming enlarged and distended, whether there would be an outlet formed for the menses.

From December 25th to January 2nd she suffered a good deal of pain every day, lasting for some hours, generally in the middle of the day, and unrelieved by any treatment.

January 2nd, a.m. There appeared a thick muco-gelatinous discharge from the rectum, coloured with blood, no doubt the menstrual fluid; since this appeared she has had no more pain.

3rd. Very comfortable; there is still a little discharge.

4th. There is neither pain nor discharge.

10th. She left the Home quite well and in a wonderfully improved state of health.—*Obstetrical Trasactions, Vol.* IV., *p.* 21.

113.—ON OVARIOTOMY. THE MODE OF ITS PERFORMANCE, AND THE RESULTS OBTAINED AT THE LONDON SURGICAL HOME.

By I. Baker Brown, Esq., Senior Surgeon to the London Surgical Home.

[The operation of ovariotomy is now daily becoming a recognised proceeding in surgical practice. Experience more and more clearly demonstrates that the operation is not only justifiable and proper, in suitable and properly selected cases, but shows that its mortality is even much less than that accruing from many other capital operations in surgery. Some most valuable statistics of the results of ovariotomy have been collected by Dr. Clay of Birmingham, in his translation of Kiwisch's 'Lectures on the Diseases of the Ovaries.' Speaking generally, it would seem as if the recoveries are now two to one, or that the deaths are about 33 per cent.]

Conditions rendering the operation justifiable.—In determining upon the performance of ovariotomy, the surgeon must be satisfied by careful and repeated examination that the tumour is ovarian, and, if possible, that it is not cancerous. The latter is at times not only extremely difficult, but impracticable; the diagnosis will be assisted, however, by the history and aspect of the patient, and the rapidity or slowness of the growth of the

tumour, together with the presence or absence of cancer in other parts of the body or in the patient's family.

Heretofore, the existence of adhesions was considered as a reason for abandoning the operation of extirpation. At the present time surgeons rarely find an obstacle to the completion of the operation in the adhesions about the ovarian sac, but either break through them with the écraseur or the hand, or divide them by a knife or scissors after tying them, if found vascular. Yet it must be admitted that they may be so strong, so extensive, and so placed, that it is advisable not to run the risk of attempting the removal of the whole tumour, and some other mode of treatment might be resorted to with advantage, as I have elsewhere described in my work on the 'Surgical Diseases of Women.' If it is necessary to secure any of these adhesions by ligatures, I would suggest that they should be silver wire instead of thread or twine, and the ligatures allowed to remain within the abdominal cavity, simply cutting them off short and close. This, I think, is a very material improvement in the operation.

Mode of performing Ovariotomy.—Different methods have been selected by various operators for performing this operation, both in regard to the position of the patient and the manner of making the incisions. My own plan, which has been fully described in my work already alluded to, is as follows :

The patient being placed conveniently on her back, and brought under the influence of chloroform, an exploratory incision, from two to three inches in length, should first be made in the linea alba. Having divided the peritoneum and reached the cyst, two or more fingers should be passed over its surface, to ascertain if adhesions exist. If these are slight and recent, they should, if possible, be broken down by the fingers ; or if they are larger and stronger, they may be divided by the écraseur; or if vascular, after being ligatured by silver wire, may be cut through by the knife or scissors. However, cases now and then occur in which adhesions are so firm and vascular, and so extended or so peculiarly situated, that is not prudent to endeavour to detach the cyst, and then we must desist from the operation of extirpation, and substitute for it one of those other plans of treatment considered in my work—such, for example, as the excision of a portion of the cyst, if, that is to say, it is not deemed more expedient to desist from any further surgical proceeding.

The presence of adhesions and the necessity of dividing them involve an enlargement of the primary incision, a measure otherwise, indeed, necessary to the further carrying out of the operation. An incision of four inches may suffice, but a

longer one is often necessary, and on the matter of the length of incision the operator must be guided mainly by his own judgment of what is necessary to enable him to detach and remove the mass with the greater facility.

The next step is to tap the cyst or cysts with a proper trocar and canula, and in the evacuation of the fluid to take care that none of it escapes into the cavity of the abdomen. Then, if there is only one cyst, and that not thick nor vascular, a portion of it only may be excised. If the cyst, however, should be found to be thick or vascular or multilocular, it will be the safest proceeding to have recourse to complete extirpation, in the following manner: The pedicle of the tumour is to be taken in the left hand and gently drawn outwards from the pelvic cavity, an assistant carefully keeping back by warm flannels the bowels and omentum. A clamp—the best, I believe, being the carpenter's callipers—is now applied around the pedicle. This should be passed as near to the tumour as possible, so that, by the entire length of the pedicle being preserved, the fastened end may be kept external to the abdominal cavity. This done, the tumour should be removed by dividing the pedicle half an inch from the clamp, which should be given to an assistant and held at the inferior end of the opening. The operator then closes the wound, and this, I need hardly say, should be done as in all operations exposing the peritoneum, as soon as possible, by introducing silver sutures about an inch from the incised edges, and about half an inch apart, through the parietes of the abdomen. This step is best done by passing a tenaculum needle through both sides of the wound and then threading the eye with the wire, and on withdrawing the needle bringing it through and twisting it. In this mode of closing the wound no secondary sutures are required.

The advantages of the clamp are that it can be removed in from one to three days, the wound heals more quickly, and the patient may get convalescent in two or three weeks, whereas when ligatures are applied they take, at the very least, nine or ten days, and now and then as many weeks to come away; and, indeed, an operator has published his cases as successful, the subjects of them having returned to the country many weeks after with the ligatures hanging from the opening; whilst they remain, the patient cannot be considered completely cured.

I used formerly to think that when the pedicle was very short it was better to apply the ligature than the clamp. But now I always use the clamp, taking care, when the pedicle is very short and the drawing gives pain to the patient, to remove the clamp in a few hours.

I have not enjoined the use of any particular length of incision, for this matter must, I am of opinion, be regulated

by the special circumstances of each case, the rule on the surgeon's part being to extract the cyst with the least danger to the patient, and through the smallest practicable incision without incurring a risk of failure in the operation. A small incision of an exploratory nature, should be the first; if the operation be proceeded with, it must be enlarged sufficiently to admit the extraction of the apparent cyst, and further increase will be very easy if its peculiarly compound nature, its position or relations, or other circumstances, demand it.

It is desirable, when the diseased ovarian mass of one side is removed, and before the abdominal incision is closed, to look at the condition of the other ovary, which not uncommonly is also diseased, and when such is the case may be at once removed. An instance of this sort is described by Dr. Peaslee, in the 'American Journal of Medical Sciences' for April, 1851, in which a cyst, the size of a pullet's egg, was discovered on the right ovary, and the whole organ was diseased. The second tumour was removed. Two somewhat similar cases occurred to myself, wherein I removed both ovarian tumours; one of them is included in the series which accompanies this paper.

There is one plan lately introduced for placing the patient undergoing the operation, which I cannot but think that extended experience will induce the originator either to change or to modify, namely, placing the patient in an arm-chair during the performance of it. The objections to this are clearly so obvious that it is unnecessary that I should dwell upon them.

In the operation great care should be used not to employ a sponge within the cavity of the abdomen; in fact, it is even better to leave that which cannot be removed with the hand or a piece of flannel, than to irritate the peritoneum with a sponge.

Preparations for the Operation. — Previous to performing ovariotomy there are certain preliminary or preparatory measures which deserve to be mentioned, from their importance as bearing on the subsequent results. These are the use of warm baths, repeated on several occasions, to cleanse and soften the skin, and thereby ensure free perspiration after the operation. To these may be conjoined suitable remedial measures of a tonic character, such as steel and arnica. A healthy condition of the skin and of the blood is highly necessary towards recovery afterwards. The bowels should be opened on the morning of the operation. A flannel waistcoat and a pair of flannel drawers should be got ready to wear; the former should be put on before the operation. A hot-water bottle should be prepared for the feet. There should be a thermometer in the room, and the temperature should not be kept lower than 66° nor higher

than 70°. A kettle should be kept boiling on the fire, so as to ensure a degree of moisture in the air, so especially requisite when the wind is in the east or the weather hot and dry. The meteorological conditions of the atmosphere should be observed and attended to before the operation, for a low and heavy atmosphere, with an absence or deficiency of ozone, and that condition generally which we describe as depressing, is exceedingly dangerous. Not only does this observation apply to ovariotomy, but to all other serious operations. If a greater regard were paid to atmospheric changes, we might expect much less of gangrene, pyæmia, low fever, and other unfavourable conditions which often arise after operations.

If the operation takes place on the bed which the patient is to occupy afterwards, the lower part should be covered by a mackintosh sheet and an old blanket. There should be a hassock or stool for the feet to rest upon. Warm stockings should encase the feet and legs, and the hands and arms enveloped in a flannel gown. No food should be taken for some hours before the administration of the chloroform, and a supply of ice should be procured for the patient to suck for two or three hours before the operation, to avoid sickness afterwards—this is of some consequence. There should be plenty of hot water in the room, in which in cold weather both the operator and his assistants should immerse their hands before touching the patient; and there should be from three to six basins of warm water ready for immersing sponges or warming the flannels, &c. The duties of each assistant should be clearly assigned and understood before entering the room. Long needles, like those used in operating for ruptured perineum, should be at hand, with metallic sutures. Several smaller ligatures for blood-vessels should also be ready, and a many-tailed flannel bandage, to go round the abdomen after the operation is completed; also a supply of lint, towels, and a few adhesive straps.

One or two scalpels, a director, a pair of scissors, a pair of vulsellum forceps, a pair of good common forceps, tenaculum, trocar, and canula of large size, together with the needles and ligature, and not less than two clamps, should be ready on a tray; and lastly, as much will depend upon the after treatment, the operator, or some competent surgeon or an experienced nurse, should remain with the patient all night. Indeed, the patient should not be left for more than two hours at a time for the first three or four days.

After Treatment.—After the recovery from the effects of the chloroform it will not be necessary to administer opium unless much pain is present, and then either one or two grains are to

be given by the mouth. If there is any tendency to sickness, it should be given by the rectum. If the pain should still continue, even after taking the opium, and the patient be troubled with flatus, fomentations must be applied over the abdomen by means of flannels steeped in hot water and freely sprinkled with turpentine. At the same time a cloth with turpentine sprinkled upon it is placed on the bed-clothes, near the mouth, so that its vapour may be freely inhaled. For the first twenty-four or forty-eight hours nothing is given in the way of food, excepting barley-water, iced drinks, &c., until the patient begins to crave for something more substantial, when it is gradually allowed. On the third day, in many of the cases, the patients have taken a mutton chop and a glass of beer.

Analysis of the Cases.—Since the opening of the London Surgical Home up to the present time, March, 1862, ovariotomy has been performed nineteen times by myself. Of that number thirteen have recovered and six have died. The details and special particulars of the whole of these are given in the accompanying tables, which shall now be analysed.

Age.—The ages of the patients varied from 18 to 56; of the successful cases there were one of 18, two of 19, one of 20, one of 21, one of 23, one of 25, one of 27, one of 31, one of 46, two of 48, and one of 56. Of the unsuccessful there were one of 21, one of 30, one of 35, one of 46, one of 50, and one of 55. So that of the successful cases eight were under the age of 30 and five above, whilst of the unsuccessful, one was 21 and five were 30 and upwards. This result agrees somewhat with Dr. Clay's statistics; but it may be stated, without reserve, *cæteris paribus*, that a better chance of success is held out to the female who undergoes the operation before she is 30; this, however, will be influenced by the duration of the disease, the condition of the patient's health, and the nature and extent of the disease, especially as regards the adhesions.

Duration of the Disease.—The duration of the disease in the successful cases was from 4 months to 6 years; six within 1 year, four of 2 years, one of 22 years, one of 4 years, and one of 6, making ten within the 2 years; nine were single and four were married, and of the latter two only had had children. Five only had undergone tapping from one to three times. In the unsuccessful cases the duration of the disease was from 2 to 10 years; four were married women, three of whom had borne families of from three to six children, and one was confined a year before the operation, although the disease was present for two years. Four of the fatal cases were tapped from one to six times.

State of the Health.—The general health was represented as very good in five of the successful cases. In six it was but middling or indifferent, in one it was much shattered, and in another actually bad. One of these had a sharp attack of peritonitis eight months before the operation, and another had a most miserable and unhealthy looking person. With these drawbacks recoveries ensued. In the unsuccessful cases four had bad or indifferent health, yet two were most anxious to undergo the operation; one was in pretty good health, and another had good health up to six weeks before the operation.

The Operation and character of the Tumour.—With respect to the operation and the character of the tumour which is revealed, the incisions varied from three to seven inches in length; in two only did it extend from the umbilicus to the pubes; in one of these the operation was fatal. In eleven it did not exceed five inches.

The tumours were polycystic or multilocular in eleven and unilocular or monocystic in two of the successful cases. In one of the former the opposite ovary was converted into a small fibrous tumous. In the unsuccessful cases the tumour was polycystic in four and monocystic in one, and more or less solid in the sixth, containing hair, steatoma, bone, and many other perfect teeth. The sizes of all these varied, but they were mostly medium and large.

Adhesions.—Adhesions were present in all, excepting four of the successful and one of the unsuccessful cases. In the other successful cases they were comparatively slight and easily broken down, although very numerous and extending in various directions in four; they were very firm and strong in two; in one of these they bound the tumour to the uterus and bladder by a band eight inches wide. In five of the six unsuccessful cases they were extensive; for example, in two they were numerous, in all directions, some of them requiring to be cut; in one of these the whole of the omentum was adherent to the uterus; in a third case they were especially strong and thick, requiring a ligature to one attached to the liver. The very extensive adhesions in the fatal cases had much to do with the result.

Anæsthesia.—It may be here remarked that chloroform was given in all the cases; in two in was discontinued because of the great falling of the pulse in one and the alarming congestion of the face and neck in the other; the patients were partially conscious, but suffered no pain; in two instances it was used during the first part of the operation, and ether for the remainder.

Pedicle.—The pedicle was retained outside of the abdomen in all but two of the cases; the callipers were used to retain it in situation externally, in place of the ligature.

Causes of Death.—It now remains to make a few observations on the causes of death in the unsuccessful cases. Out of the nineteen cases in which ovariotomy was performed there were thirteen recoveries, as has been already stated, and six deaths. On looking carefully into the latter it will be observed that in four the fatal result ensued from causes that cannot be fairly attributed to the operation itself. In the eighth and fourteenth cases the fatal result was mainly the result of the operation. In the eighth case an emaciated patient, aged forty-six, had been tapped six times, the adhesions were most considerable, and bled freely on breaking them down, which was the chief cause of the obstinate vomiting and low peritonitis, which ended fatally in two days. Case 14 presented such extensive and firm adhesions that a recovery was not anticipated at the time of the operation; the tumour extended itself into the pelvis, and was glued to the uterus; death was clearly the result of shock in forty hours.

In the other cases, namely, Nos. 2, 3, 18, and 19, other causes influenced the result. In the second case the patient's general health was for some time previous much broken. She was very urgent to have the tumour removed, and in doing it, it was discovered to be congenital, being chiefly solid, containing loose hair, ten pints of steatomatous fluid, bone, teeth, &c. Death occurred in thirty hours; and besides evidence of recent peritonitis, there were the remains of much old disease, the liver being firmly bound to the diaphragm by old adhesions. In No. 3 the patient had been a hard drinker and had softening of the liver; she had been tapped five times, and was very urgent in her demands for the operation. The abdomen contained forty-five pints of ascitic fluid independently of the contents of the cyst. Death ensued in six days from incessant vomiting of green bile, the result of the diseased state of the liver. Cases 18 and 19 almost speak for themselves, for diarrhœa carried off both, the first in eighteen days and the second in eight days after the operation. In case 18 a large pelvic abscess, which had burst, existed near the rectum, and scirrhous ulceration of the duodenum was observed. In case 19 the patient went on wonderfully well until the diarrhœa set in, the shock of which, acting upon such a diseased heart as was discovered after death, readily brought about a fatal result by choleraic collapse.

Conclusion.—In this communication I have given the particulars of all these nineteen cases, without any reserve. The

details are extracted from the note-books of the Home; the operations were all witnessed by various professional gentlemen from various countries, from different parts of Great Britain and the metropolis, many of whom, at the same time, watched the progress of those that recovered from day to day and week to week; and in now bringing them before the Obstetrical Society of London I do so in the hope that ovarian disease will continue to obtain that attention from practitioners which the last three or four years has given satisfactory evidence of.

Mr. Spencer Wells said that the recommendation of the author of the paper to tie adhesions with silver wire, to divide the adhesions, and then cut off the wire short, leaving a portion of dead tissue strangulated by the wire within the peritoneal cavity, was advice which he should not be disposed to follow. The material of which the ligature was composed could be of little importance. Either wire or twine would equally cause gangrene of the strangulated part, and there would be great danger that the whole system might be poisoned by absorption of the fetid matter of the decomposing slough. He felt convinced that if this practice were followed the mortality after ovariotomy would increase. He preferred a ligature of wire-rope, tightened by a screw, to the calliper-clamp; and he thought (after trying both seton-wire and harelip-pins for the closure of the wound) that harelip-pins were generally to be preferred. The lateral pressure made by the cotton twisted round the pins fixed the two wounded surfaces more closely and securely than the wire. He differed entirely from the author in his preference to flannel over sponge in cases where it was necessary to cleanse the peritoneal cavity from blood or ovarian fluid. A soft, clean sponge did the work more effectually, and there was not the danger, as there was with flannel, of leaving portions of fine wool, or *fluff*, adhering to the peritoneum. He also thought that the author's advice would lead to a want of care in thoroughly cleansing the peritoneal cavity from ovarian fluid. In a recent case he had been led by some such advice, and by what he had heard of the practice of other surgeons, to leave some ovarian fluid in the cavity, thinking that as the intestines were exposed it might be more dangerous to sponge away the fluid than to leave it; but the result had very much disappointed him. There was little else unfavourable about the case, yet the patient died, thirty hours after operation, of acute peritonitis, and the whole membrane was covered by a layer of the albuminous portion of the fluid. The peritoneum seemed to have acted as a dialyser, allowing the water to pass through, and leaving a coating of albumen on its surface.—*Obstetrical Transactions, Vol.* IV., *p.* 59.

114.—ON A DOUBLE-JOINTED UTERINE PESSARY.

By the Hon. David Elliot Wilkie, M.D., Physician to the Melbourne Hospital.

[In the treatment of uterine displacements Dr. Simpson chiefly relies on a metallic frame pessary, which has for the last fifteen years been very generally adopted by the medical profession. This instrument very much resembles that of Dr. Wilkie's; but the uterine and vaginal portions form one piece. This renders it rather difficult to introduce. The first portion of the instrument being introduced, and the uterus replaced, it has to be locked to the second or external portion. To do this it is necessary to bend back the pubic portion of the external frame-work, to a considerable extent for the purpose of avoiding its being caught and impeded by the anterior part of the pelvis or pubes. After the locking is accomplished, the pubic portion of the instrument is bent and moulded upon the anterior portion of the pelvis, so as to fit it as exactly as possible. The disadvantage of this is that the uterus is rendered at once completely solid and fixed, and the constantly varying position of the uterus not allowed for. Dr. Wilkie's pessary is a modification of this pessary of Simpson's.]

The double-jointed pessary is composed of three pieces, the uterine, the vaginal, and the pubic portions. The uterine piece consists of a metallic pessary, with an almond-shaped bulb, and with the orifice of the tube expanded in a trumpet-like form. The vaginal piece in is the form of the capital letter U, with one arm shorter than the other. The long arm fits loosely into the tube of the pessary, the orifice of which, from its expanding form, is always readily found. The central portion is three inches in length, and occupies the vagina; the short arm fits into the pubic portion of the instrument, which consists of a wire-frame terminating in a canula.

The vaginal and pubic pieces have a trocar and canula joint to secure perfect freedom of motion, and the position of this joint renders the bending and moulding of the pubic portion on the abdomen of the patient altogether unnecessary.

Immediately above the bulb of the pessary there is a small round hole in the tube, into which a piece of hooked wire may be inserted through the bulb, when from any cause there is difficulty in removing the pessary. It sometimes happens, especially in cases in which the uterus is enlarged, that the bulb enters the os, and becomes firmly fixed by muscular contraction.

In such cases, the importance of this appliance is sufficiently obvious. The wire is readily introduced through the orifice of

the bulb, and with a little manipulation it is firmly hooked into the pessary. In one instance, I had slightly to incise the os with Professor Simpson's hysterotome, to permit of the removal of the pessary. The patient had no bad symptoms afterwards. In this case the pessary had not been prepared for the application of the wire. It was withdrawn by passing a piece of bent wire over the bulb, and hooking it on to the tube.

For the introduction of this instrument the patient is laid on her left side, the forefinger of the left hand is passed into the vagina, to hold back the fourchette, and to guide the pessary which is introduced on a straight director (as a piece of iron wire) held in the right hand. When the bulb of the pessary reaches the os, the uterus is restored to its proper place by means of the director, and retained in this position for a short time, perhaps one or two minutes. The forefinger of the left hand is now placed at the orifice of the bulb; the director is withdrawn, and the long arm or stem of the vaginal piece is guided into the tube. The patient is then turned on her back, and the pubic portion of the instrument is finally adjusted.

If the wire frame appears too loose on the abdominal walls, it is removed from the instrument, bent sufficiently forwards, and then readjusted. When first applied, the wire frame may appear too tight from the dragging of the uterus, but the following day it will probably be found sufficiently slack from the more perfect restoration of the organ to its proper place.

It is always desirable that the patient should be seen in one or two days after the instrument has been introduced, for the purpose of adjusting the wire frame.

I have alluded to the occasional dilatation of the os uteri, so as to permit of the entrance of the bulb of the pessary. In cases where this may be anticipated, a crescentic bulb, similar to that hereafter described for prolapsus uteri should be used.

A few days ago, I was consulted by a lady from Ballaarat, who had weaned her child four months ago, and who had not seen her catamenia since. The os uteri appeared pale and small, and the walls of the uterus were very soft and thin. The sound passed readily for nearly three inches into the hollow of the sacrum, but the uterus could easily be turned in any direction. I applied the double-jointed pessary to support the uterus in its normal position, and in the hope of exciting it to healthy contraction. I requested the patient to call in three days, and I was surprised to find the bulb of the pessary within the os. It was very easily removed, however.

Imperfect contraction or subinvolution of the uterus is a frequent cause of uterine displacements, and the result of the application of a pessary in this case shows how necessary it is

that those who wear this instrument should occasionally be seen by their medical attendant.

In cases where simple pessaries are required, either to dilate the os uteri, or to restore the catamenia, I now employ the double-jointed pessary. Without external support, simple pessaries are seldom retained for more than two or three days, and they may, very inconveniently, drop out in the street, or in the closet. In slipping from the uterus into the vagina, there is also some danger that they may get lodged in the transverse axis of the pelvis, and thus cause a partial displacement of the uterus.

The double-jointed pessary is so easily applied, and so safely worn, that I can see no special advantage in the use of the simple unsupported pessary in such cases.

When galvanic pessaries are required for the undeveloped uterus, or in cases of amenorrhœa, I now use them with the double-jointed instrument, and of a similar form to the others.

I have two patients, married ladies, with undeveloped uterus, who are now wearing galvanic pessaries in this way.

After incision of the os uteri for contraction or stricture, many different expedients have been adopted to keep the canal permanently open. In about a week after this operation, or when there is no longer any fear of hemorrhage, I apply for this purpose the double-jointed pessary. The instrument causes no greater inconvenience in consequence of the operation, and if worn for one or two weeks, sufficient dilatation is readily secured.

Prolapsus uteri is simply another form of displacement, and since all these affections are best treated by supporting the uterus in its own proper axis, I have every confidence that the double-jointed pessary will be found to give a well-directed and effectual support in such cases.

For this purpose the common almond-shaped bulb pessary requires to be somewhat modified. As enlargement of the uterus is an ordinary accompaniment of prolapsus, the stem o the pessary should be sufficiently long to reach very nearly to the fundus, and it is necessary that the bulb should have a crescentic form, to support the os uteri without dilating it. This crescentic bulb is similar in width to the almond-shaped bulb, and its length is about two inches. A hollow metallic bulb of this form being difficult to make, a solid bulb of aluminum, or porcelain, may be substituted. It is most readily made of camphor or myall wood. As in the other bulb pessaries, there should be a small hole in the tube to facilitate its removal. I have less hesitation in recommending this new instrument in cases of prolapsus uteri, since it may safely be said that every instrument or expedient hitherto proposed, has failed to give

that direct support in the true axis of the uterus, which is essential for its successful treatment.

A smaller crescentic bulb will be found very useful in all other cases in which the ordinary almond-shaped bulb has a tendency to enter the os uteri. It is no small advantage possessed by this double-jointed instrument, that any kind of pessary may be used with it, the orifice of the tube being formed in a similar manner.

There is one other point which I may be permitted to notice. Those patients who have worn this new instrument have felt so little inconvenience from it, after the first day, that they scarcely knew they were wearing it, either in walking or driving.

Much exercise, however, should always be avoided, as it is apt to excite troublesome hemorrhage and may necessitate the removal of the instrument. — *From a paper read before the Medical Society of Victoria, July* 1, 1863.

115.—ON THE USE OF MEDICATED PESSARIES IN THE TREATMENT OF UTERINE DISEASE.

By Dr. T. Hawkes Tanner, Assistant Physician for the Diseases of Women and Children to King's College Hospital, &c.

[The chief reason for the non-employment of medicated pessaries has probably been the difficulty of so making them that they can be efficiently applied by the patient herself. Moreover very few druggists succeed in making them properly. The use of the butter obtained from the Theobroma Cacao nut, however, obviates this difficulty. It possesses many valuable qualities.]

It has an agreeable smell, and does not soil the fingers when handled; it does not become rancid; while, more particularly, though very firm, it has the property of becoming fluid at a low temperature. It is sometimes a little too stiff, but this fault is readily obviated by combining with it a little olive oil or glycerine. Pessaries made with cacao butter, though they have the consistence of wax while cold, are dissolved in the course of a few minutes when introduced into the vagina.

If ophthalmic surgeons are much indebted to Mr. White Cooper for directing attention to the uses of this butter, obstetric physicians are under no less an obligation. For although it had been used in America for making ointments for some time before this gentleman wrote of its merits, yet no physicians in this country were acquainted with its value, as far as I can learn from many inquiries.

There are few uterine diseases in which the use of medicated pessaries may not advantageously form a part of the treatment. But they are more especially valuable in acute and chronic

inflammation of the cervix uteri; in internal metritis, with exfoliation of the lining membrane of the uterus; in slight prolapsus or procidentia; in cancer; in all varieties of ovaritis; as well as in many affections of the female bladder. By means of them the diseased parts may be kept constantly bathed in such drugs as mercury, iodine, lead, zinc, belladonna, opium, conium, &c. They are not only most efficacious in relieving pain, but they also shield the diseased and irritable surface from contact with the vaginal walls. Owing to this latter property, they are of great utility in healing excoriations about the labia uteri; though, of course, part of the benefit derived from their use in these cases must be attributed to the absorption of the materials composing them. By their employment, moreover, the necessity for frequent examination of the morbid structures is greatly diminished.

The following formulæ are given as examples of the way in which I generally prescribe these remedies. It is only necessary to premise that rather large doses of the different drugs are necessary, inasmuch as absorption through the walls of the vagina is slow and uncertain.

1. *Iodide of Lead and Belladonna Pessaries.*—℞. Plumbi iodidi, ℈ij; extracti belladonnæ, ℈j; butyri cacao, ℥iv; olei olivæ, ℥j. Misce. Divide into four pessaries, and order one to be introduced into the vagina every night or every other night.

2. *Mercurial Pessaries.*—℞. Unguenti hydrargyri, ℈iv—℥ij; butyri cacao, ℥iv; olei olivæ, ℥j. Misce. Where there is tenderness of the cervix uteri, one scruple of extract of belladonna or two scruples of extract of conium should be added to the mass. Divide into four pessaries.

3, *Lead and Opium Pessaries.*—℞. Plumbi acetatis, ℈j; extracti opii, gr. xij; butyri cacao, ℥iv; olei olivæ, ℥j. Misce. Divide into four pessaries. Order one to be used every other night.

4. *Zinc and Belladonna Pessaries.*—℞. Zinci oxydi, ℥j; extracti belladonnæ, gr. xij—℈j; butyri cacao, ℥iv; olei olivæ, ℥j. Misce. Divide into four pessaries. One to be used every night.

5. *Iodide of Potassium and Conium Pessaries.*—℞. Potassii iodidi, ℥j; extracti conii, ℈iv; butyri cacao, ℥iv; glycerinii purii, ℥j. Misce. Divide into four pessaries, and direct one to be used every night.

6. *Tannin and Catechu Pessaries.*—℞. Tanninæ, ℈ij; pulveris catechu, ℥j; butyri cacao, ℥iv; olei olivæ, ℥j. Misce. Divide into four pessaries, and order one to be used every other night.

In some diseases of the uterine cavity, attended with copious muco-purulent discharges or with hemorrhage, the greatest benefit may be obtained from the local use of astringents. Once or twice a week a pessary made of tannin and the cacao butter, about two and half inches long, and of the size of an ordinary stick of nitrate of silver, may be introduced up the canal of the uterus, and left there. It soon dissolves, and thus coats the whole seat of the discharge with the medicament, the coating remaining attached for many hours. Such a pessary, weighing about thirty-six grains, will usually contain from twelve to twenty grains of tannin. Of course other substances—as alum, sulphate of zinc, dried sulphate of iron, &c.—may be employed in the same manner, if their use be indicated. This plan of treatment has none of the objections which apply to throwing fluids into the cavity of the uterus, a proceeding that is certainly not unattended with danger. There is no necessity, moreover, for dilating the cervix with sponge-tents prior to the introduction of the pessary; inasmuch as, when sanguineous or purulent discharges have long been present, the os and cervical canal will always be found sufficiently patulous to permit of the introduction of these astringent rods.—*Obstetrical Transactions*, *Vol.* IV., *p.* 205.

116.—ON THE ACTION OF NITRATE OF SILVER.

By Robert Ellis, Esq., Obstetric Surgeon to the Chelsea and Belgrave Dispensary.

[Erroneous views are entertained by many as to the therapeutic influence and physiological properties of nitrate of silver. For instance, many years ago Mr. Higginbottom, in his excellent treatise on the properties of this substance, denied its escharotic power, and attributed simply astringent and stimulant properties to the salt. Nitrate of silver, must indeed, be defined as a true escharotic, of a low power of penetration.]

Considered in its relation to our uses as obstetrists, it must not be forgotten that the substance is applied to a region of the body, the canal of the cervix uteri, which of all others exposes the largest amount of surface, by reason of the rugose character of the membrane and the large size of the villi which stud its surface. Numerous orifices of excretory glands likewise present additional facilities for the deep penetration of any caustic substance. The application of the lunar caustic to such a structure cannot fail to be attended with the large decomposition of living tissue, since it is penetrated by it on every side, and the result is the production of a true slough or eschar. Provided the stick be held in contact with this surface for a

minute or two, the delicate structure of the villi, and that of a superficial portion of the mucous membrane underlying the fine epithelium of this part, cannot fail to be destroyed. In practice, as is well known, this is really the case, and a true slough is thrown off. That this eschar is something more than coagulated mucus the writer has satisfied himself by an examination of it under the miscroscope.

To the obstetric surgeon it is indeed invaluable. It is essentially characterised by its strict limits of action, a point well made out under the microscope; by its active and yet most manageable properties as a caustic substance; by its powerfully astringent and stimulant qualities, and by the healthy and kindly healing surface which results from its escharotic use. These are properties possessed by few, if any other, of our escharotic substances, and they render this one in a special manner applicable for the treatment of most of the ulcerative diseases of the os uteri. To produce its full effect as an escharotic it is necessary to use it most firmly, and with a certain degree of friction and rotation. By this means it penetrates below the surface, and an eschar of sufficient depth can be readily obtained. But nitrate of silver, in its ordinary form of lunar caustic, is wholly unfit for this kind of service, in consequence of its great brittleness; and the constantly recurring annoyance which has arisen to obstetrists out of this defect has led of late to several attempts at its removal.

Commercially, the nitrate of silver is sold in large, tabular crystals. These contain a certain amount of water of crystallisation, with a very little free nitric acid. When heated to a certain point, the crystals fuse, and the nitrate may be run into moulds; in this manner the ordinary lunar caustic is made. The mould, which is usually made of brass, and electro-plated inside, has a number of cylindrical grooves in it, and thus many sticks are cast in one operation. In order to ensure perfectly white caustic, it is necessary to melt it with care in a silver ladle. It is probably because the fused material is very quickly cooled that it is so extremely brittle, as it is generally found in commerce; and a good way of procuring caustic much less friable than common is to allow the mould very slowly to become cooled.

Many attempts have been made to remedy this defect, with more or less success. Within the last year or two great efforts have been made by the operative chemists to give to their caustic the character of toughness while preserving its purity. The admixture of a certain proportion of chloride of silver—which may be fused into a substance called by the old chemists horn silver—with the nitrate, to a great degree

diminishes the brittleness of the latter. But this kind of caustic has the disadvantage of being much less active as an escharotic, and also, owing to the photographic properties of the chloride of silver, it becomes quite black by exposure to the light. Its use was consequently soon discontinued. Another method of communicating a certain degree of toughness to the caustic consists in the addition of a small quantity of the nitrate of lead to the fused mass. The effect of this is certainly sufficiently good to justify the addition, and a tolerably firm pencil is secured thereby. But in this, as in all other instances, the caustic is weakened in exact proportion to the amount of foreign matter introduced. The admixture of a small percentage of the nitrate of potash (the toughness of which in a fused state is well exemplified in the common sal-prunel ball) is likewise of service in destroying the brittleness of the caustic cylinder, and the varieties of tough caustic now sold by different London chemists will be found to contain one or other of the ingredients named, in addition to the nitrate of silver. The very slow cooling of the fused mass may also be taken advantage of in preparing these specimens of a not-friable caustic. Some of the best makers of this variety of caustic have sent specimens to the author for practical use, and some are now shown to the Society.

The writer has been pressed by the makers of tough caustic to give an opinion as to its value in practice, and he would observe with regret that, without any exception, this caustic fails to answer the expectations that might be formed of it. After the first or second use it is no longer tough, but nearly as friable as common caustic, and the writer has more than once broken off a considerable piece of it high up in the cervical canal. It would appear as if the moisture of the surface to which it is used penetrated its substance and robbed it of the strong cohesive property which it possesses when newly fused. It will be observed that the makers enclose this caustic in sealed glass tubes, evidently because of the injurious action of damp upon its tenacity.

If it be desirable to produce a very firm and tenacious caustic cylinder, the writer has long since suggested the best way of doing this, which is by mixing up with the fused material a small quantity of long asbestos fibres. These will hold the crystalline particles together, and the preparation is not influenced by damp. The tenacity given to common mortar by the mixture of hair with it gives a practical example of the value of this suggestion.

But the whole difficulty has, in the writer's opinion, been long since removed by a simple and useful instrument. A modification of this instrument has been in constant use by the

writer for more than ten years, and was exhibited by him with the perforated caustic more than eight years ago at a meeting of the Western Medical Society. More recently this invention has been taken up by the French surgeons, whether with or without the knowledge of its original source the writer is unable to say. But the author desires to put on record this claim to the originality of his instrument, a condensed account of it being contained in the proceedings of the society just named.

The simple idea of the instrument is the solid and unyielding support given to the brittle caustic by passing a metallic pin through the centre of the cylinder. To effect this the caustic must be cast hollow, and after some little trouble the writer succeeded in making a simple mould by which it can be accomplished. The moulds employed are of two forms, that for casting cylinders and the original one for casting bullets of caustic. In each case the central perforation is produced by passing a polished steel pin through a hole in the upper and lower halves of the mould, and the fused caustic is then poured into the mould. On solidifying, the pin is easily withdrawn, and a hollow bullet or stick of caustic is produced. In practice it is found best to lubricate the mould and the steel wire with a little oil occasionally. The caustic is thus readily detached from both.

The caustic-holder differs in many respects from the ordinary form, but is really quite as simple, and by no means liable to injury or derangement. It consists of a small socket of silver, bisected and carried on the halves of a slender metallic support, grooved internally, and externally cut to a spiral thread, on which a nut works to and fro. The cylinder of caustic drops about one eighth of an inch into this socket, and a platinum pin, exactly like a common pin, is passed through it and between the halves of the stem. The little nut is now worked upwards, and the pin being secured by its pressure, a perfectly firm and unbreakable cylinder of caustic is held by the instrument.

There are two parts of this caustic-holder to which, in addition, the author invites notice—the stalk and the cover. The former is made of a large porcupine quill, the polish, elasticity, lightness, and strength of which make it an invaluable handle for a surgical tool, and especially for one frequently immersed in water. The cover is *perforated* at its end, and by this simple contrivance the caustic is always kept dry and hard, instead of in the half deliquescent and filthy condition in which it is found in the holders with covers hermetically closed at the end. The small perforation at the end admits the air to the caustic, and causes the evaporation of any fluid which may hang

about it. The comfort and handiness of this instrument is promoted to no slight extent by these two features in its construction, and the writer can strongly commend them to the notice of other obstetric practitioners.

For many years the author has used no other caustic-holder or caustic than that here described; and having had during that time a very large experience of the value of this simple invention, he would now beg to offer it for the use of others similarly engaged. The instrument and the perforated caustic may be procured at several of the best instrument makers,* and the writer can assure any who make trial of it that in a very short time it will save its cost in the extraordinary economy with which it can be used, the caustic being available to the last fragment. In conclusion, the writer would observe that it has been objected to him by some surgeons that it is rather a benefit than otherwise to leave a piece of caustic behind in the the cervical canal. The severe pain, the great amount of hemorrhage and discharge, and the extensive excoriation of the external parts, which follow this surgical blunder in treating diseases of the cervix uteri are, in the writer's opinion, a sufficient condemnation of the accident. The deliberate practice of breaking it off intentionally is certainly not warranted by its results nor necessary to the cure of disease.—*Obstetrical Transactions, Vol.* IV., 1863, *p.* 120.

117.—ON THE TREATMENT OF CROUP AND OF THE THROAT AFFECTION IN SCARLATINA.

By Dr. G. Hamilton, Falkirk.

[Speaking of the throat affection of scarlatina, Dr. Hamilton observes:]

Where it has made its appearance in a family, I would say that nothing should be taken for granted. Let the throat of every member of it be examined daily, and let the first appearance of inflammation or of lymph be regarded as sufficient evidence that treatment is required. With this precaution, I feel certain that a large proportion of what apparently are sudden seizures may be got under treatment some, and frequently many, days before dangerous symptoms show themselves, and that the occurrence of these may be anticipated and prevented, or at least their intensity greatly abated. To any one who has attended carefully to even the local treatment of the analogous throat and laryngeal affections in scarlatina anginosa and

* Mr. Coxeter, who was employed by the writer in the first instance to make this instrument, has succeeded extremely well in its production, and also in that of the perforated caustic.

in croup, nothing, I think, can be more gratifying than to see the command which prompt, early-begun treatment has over these destructive affections. Out of many hundreds of scarlatina cases which I have had under my care, I can remember scarcely a case in which, if I saw it within the first twelve or even twenty-four hours from the appearance of the eruption, I was not able, simply by assiduously applying the solid caustic, or the solution, to the tonsils and surrounding parts, to keep these in a comparatively entire and healthy condition; and this even where the case was, from other causes, running on to a fatal issue. Without such treatment, I cannot doubt that in these instances the tonsils would often have been found after death, what most surgeons conversant with this disease must have seen them become when neglected, a pulpy sphacelated mass, with the marks of intense inflammation in the adjacent parts. In croup, also, I know of no treatment which is so satisfactory as the application of the caustic solution, provided it be made immediately on the appearance of the characteristic ringing cough. In the latter paper I have alluded to, I mentioned that I had repeatedly in my own family had occasion to employ this remedy; and I repeat now what I said then, that I have generally found the croupy cough and breathing to have either disappeared or to be greatly improved, within half an hour after one or two applications. Two conditions, however, seem to me essential to success; the first is, as I have said, that the application shall be made *very early*. How early it must be made, to secure a considerable measure of success, it is not easy to say, as cases differ much in the rapidity with which they advance; but my experience has taught me, that very generally, if the disease has lasted for only ten or twelve hours, the caustic solution produces, for every hour lost, less marked effects. Acting on this experience, I have for many years made the whalebone and sponge part of the furniture of my pocket-case, and the moment I am called to a patient with the slightest croupy cough or breathing, I improvise a solution with my solid caustic, and touch the glottis. The second condition necessary to secure success is, that not the throat merely (which I have never found much affected in real croup) should be sponged, but that the glottis should be touched and that some drops should fall into the larynx. With a little practice and dexterity this is easily done, even in infants. That the solution has really got into the larynx, we are assured from noticing the interruption to breathing which takes place in consequence. A good many years since, to satisfy myself as to the precise bend and dimensions required in the whalebone, in order to strike the glottis in children with precision, I extracted the cervical vertebræ,

and opened the pharynx from behind, when making a post-mortem examination of a girl five years old, who died of croup, and I found that the arm to which the sponge is fixed should be about $2\frac{1}{4}$ inches long, and the bend not quite that of a right angle. A firm piece of whalebone should be chosen; and to prevent the sponge slipping off, I have two small holes drilled in the whalebone, and the sponge sewed on through these.

Since the above was written, I have also used a simple little instrument for dropping the caustic solution into the larynx. and trachea. It consists of a bit of india-rubber tube, of the smallest size, tied gently on the upper side of a firm piece of whalebone, having the proper curve. With this, a quarter of a drachm of fluid, or more if wished, may with the greatest ease be dropped over the glottis; and any one can easily satisfy himself by experiment that some of the fluid reaches the trachea. In using the instrument, I place the quantity of fluid wanted in a wine-glass, draw it up the tube with the mouth, compress the tube with the finger at the proximal extremity to prevent escape, and withdraw the pressure when the tube is over the glottis.—*Edinburgh Medical Journal*, *August* 1863, *p.* 132.

118.—ON THE TREATMENT OF HOOPING-COUGH BY BELLADONNA AND SULPHATE OF ZINC.

By E. Garraway, Esq., Faversham.

[During the last winter, Mr. Garraway has treated between fifty and sixty cases of hooping-cough, by belladonna and sulphate of zinc. He suspends those remedies at once if anything like bronchitis or pulmonary congestion supervene.]

The first three cases I saw occurred in a school. They were boys between the ages of six and nine. The paroxysms in all were moderately frequent and severe; the general health was good. Two were placed under my care; the third was left to take his chance. In eighteen days my patients had entirely ceased to cough, whilst the other boy was in precisely the same state as when I first saw him, and so continued for several weeks afterwards.

A little girl between two and three years old was brought to me, whose fits were described to be of the most violent character; and indeed the poor child's appearance did not belie the mother's statement, for both conjunctivæ were so entirely ecchymosed that the white sclerotic coat was invisible: no blow, however severe, could have produced a more complete pair of black eyes. For a fortnight there was not the slightest improvement, and I was in consequence much troubled to keep

my patient up to her medicine; in one week more, however, the cough was gone, and the ecchymosis had completely disappeared.

Three weeks afterwards the mother came for the same medicine for her infant, eight months old, who coughed and whooped, she told me, a dozen or twenty times in the day and some half-dozen times in the night—not a severe case. I exhorted her not to be disheartened for three weeks, but to come regularly for her supplies. She never made her appearance again; and on meeting her some time afterwards, and expressing my regret that the treatment had not been followed up, she replied—"Why, the medicine you gave me lasted a week, and by that time the cough had entirely ceased, and has never returned."

These are samples (which might be multiplied) of the more favourable class of cases. Others were marked by a steady improvement, commencing at once and continuing day by day; but at the same time I must admit that not a few required fully three weeks to make a decided impression. After this period, however, the improvement was most rapid; indeed, treatment was seldom continued beyond the third week. The most lengthened period, for which in any case, belladonna was administered was five weeks. I found that if by this time the cough was not quite gone, it was nevertheless desirable to discontinue the remedy; as it would seem that after the system was thoroughly saturated, a further persistence deranged the general health without any commensurate advantage accruing: the tongue became coated, the appetite failed, and vomiting without cough would occasionally occur. On ceasing, however, to take the medicine, not only did all these untoward symptoms subside, but the remains of the cough vanished with them.

Marsh miasmata appear to render hooping-cough, as they do most other forms of disease, more intractable; and two children I could do nothing with until removed from the swamp in which they resided.

The mode of administering the belladonna was in the form of extract, either diffused in water with the sulphate of zinc and sufficient syrup to make it agreeable to young children, or, to those who were old enough and preferred it, in the form of pills,—the dose being from one-sixth to one-fourth of a grain of the extract, and one-half to a grain of the zinc, three or four times a day, steadily increasing the amount till, at the end of three weeks, children of five or six years old would be taking from four to six grains of belladonna, and twice that quantity of sulphate of zinc, daily.

So far as my investigation went, it would appear that both the tolerance of the remedy and the speedy subsidence of the disorder were in inverse proportion to the age of the subject,—

a child of eight or ten weeks old bearing a much larger proportionate dose than one of eight or ten years, and manifesting a much more rapid improvement. In this I find I am in accord with other observers.

Dilatation of the pupils and indistinctness of vision commonly came on after a few days. When these effects manifested themselves the dose was diminished somewhat; but having been assured by Dr. Fuller, of St. George's Hospital, whose experience of the physiological effects of belladonna has been considerable, that no permanent injury ever resulted from this condition, I did not think it necessary to interfere with the general line of treatment.

In two cases more decided poisonous symptoms were developed. One was a little girl of six, who had reached the amount of six grains daily, and whose pupils had been dilated more or less for a week. This child became one day, as her parents termed it, "silly," delivered wrong messages, gave inapt answers, asked what had become of her sisters when they were present, and talked in an incoherent and ridiculous manner. This state quite passed off the next day by discontinuing the medicines.

The other case was that of a very delicate little girl of four years who had attained to four grains a day. I was called to her in the night under the great alarm of her parents. She had been in a state of immoderate mirthfulness and excitement during the evening, and on being put to bed could not be quiet, and at length became delirious, singing, calling for her mamma and nurse, of whose presence she was unconscious, picking at the bed-clothes, seeing imaginary objects—in fine presenting a train of symptoms very analogous to what we witness in delirium tremens in the adult. This state was succeeded by three or four hours of refreshing sleep, such as the child had not experienced for many nights. On awaking she was perfectly restored, and from that hour the improvement was remarkably rapid. I need hardly say I suspended the remedy for a day, and gave it afterwards in diminished doses.—*Lancet*, *Oct.* 17, 1863, *p.* 446.

119.—ON THE TREATMENT OF HOOPING COUGH.

By Dr. Henry William Fuller, Physician to St. George's Hospital.

[The following passage is taken from a work recently published by Dr. Fuller, "On Diseases of the Chest." The catarrhal stage of the affection must have passed off before the plan of treatment advised is adopted.]

"As soon as the whoop declares itself, a draught is given every three or four hours, containing half a grain or a grain of sulphate of zinc, and a sixth of a grain of extract of belladonna to two drachms of syrup, in from two to six of water, and an additional grain of sulphate of zinc, and an additional sixth of a grain of belladonna are added to each dose daily, or every alternate day, until the quantity taken daily amounts to from six grains to a drachm of zinc, and from two to six grains of the extract of belladonna, according to the age of the patient. To children under a twelvemonth old I have never administered more than ten grains of zinc and two grains of belladonna daily, which were given in doses of a grain and a quarter of the zinc, and a quarter of a grain of belladonna every three hours; whilst for children of eight or ten years of age I frequently prescribe half a drachm or two scruples of the zinc, and six grains of belladonna. If the dose be gradually and cautiously increased, the medicine will not occasion sickness; and as it neither heats nor excites the patient, it may be given as soon as the true nature of the complaint is ascertained. Its administration, however, need not preclude the exhibition of other remedies; and if there is feverish heat of the skin and persistent quickness of breathing, indicating inflammation of the lung, or if the bronchial flux is great and oppresses the breathing, it is always prudent to have recourse to auxiliary measures."

That belladonna is a drug which the system will tolerate in much larger doses than has usually been supposed possible, has been made known to the profession through the medium of a paper by our author in the forty-third volume of the Royal Medico-Chirurgical 'Transactions.' The precautions to be observed in its administration being that it shall be given daily in divided doses, and that these shall be gradually increased, a sudden large augmentation being speedily followed by its characteristic signs of poisoning.—*British and Foreign Medico-Chirurgical Review, July* 1863, *p.* 18.

120.—TREATMENT OF HOOPING-COUGH WITH THE BROMIDE OF AMMONIUM.

By Dr. G. D. Gibb, Physician to the Westminster Hospital.

[Dr. Gibb has lately tried the bromide of ammonium in various diseases, and in hooping-cough amongst the number. In some cases the results were very satisfactory. The following are from the clinical remarks of Dr. Gibb, appended to some cases published in the Lancet.]

Judging from his experience at the West London Hospital, he would say that hooping-cough, even in very bad cases, could be readily cured by the new salt of bromine; but, like many other remedies, it could not be expected to cure the disease invariably. Learning from experience the effects of the salt upon the mucous membrane of the entire body, but more especially of the upper respiratory tract, he thought that hooping-cough was one of those diseases that ought to be submitted to its influence, and in the general results he was not disappointed. As a permanent remedy, he had more faith in the dilute nitric acid given in pure syrup, when combined with topical application to the larynx of a solution of nitrate of silver; but as others had either found it useless or had not given it a trial, it was but right that other agents capable of curing the disease should be made known, and one of these was bromide of ammonium.

With regard to the dose: for infants, two or three grains three times a day are enough; to older children from four to eight grains may be given, and in some cases, where the symptoms are remarkably severe, even ten grains. The simpler the vehicle the better, but if there is a tendency to bronchial or pneumonic inflammation it should be combined with either a mixture or the wine of ipecacuan.

The special nervous symptoms seem to be more under the control of the drug than the catarrhal, for the spasms diminish in frequency and severity, and consequently the whoop is not so often heard, showing a subsidence of the active symptoms. *Pari passu*, the cure is not more speedy than from the dilute nitric acid in uncomplicated cases; nevertheless it is worthy of a more extended trial, especially in severe and obstinate cases. —*Lancet, Sept.* 26, 1863, *p.* 365.

MISCELLANEOUS SUBJECTS.

121.—ON ASSIMILATION AND THE INFLUENCE OF ITS DEFECTS ON THE URINE.

By Dr. F. W. Pavy, Assistant Physician and Lecturer on Physiology, Guy's Hospital.

[Fat is a material, having a destination totally different from the principles belonging to the azotised group. It is in some sense an article of nutrition, but the chief ultimate destination of the oleaginous principle in the animal system is towards the production of heat, by undergoing a slow process of combustion or oxydation in the animal system.]

Fatty matters pass through the mouth and stomach without being digested, or rendered fit for absorption. According to Dr. Marcet's researches, however, neutral fats are acidified in the stomach, and placed in a state for being emulsified by the bile, the bile having no power to emulsify the neutral fats. When the fat of meat is consumed, the areolar tissue belonging to the adipose texture is dissolved, and the oily matter liberated, so that it may be afterwards prepared for absorption. Into the intestine a fluid is poured beside the bile—namely, the pancreatic juice, one special province of which is to emulsify or minutely divide the fat so that it may pass into the lacteals, and afterwards enter the circulatory system.

Dr. Bright arrived at the opinion, from pathological observation, that the pancreas was concerned in the digestion of fat. He noticed in cases of obstruction of the duct through malignant disease in the neighbourhood, that fat was allowed to pass and to appear in the alvine dejections. There are specimens of solid fatty matter preserved in the museum of Guy's Hospital that were obtained from cases of this description. Bernard, in the most conclusive manner, has since confirmed the opinion thus entertained by Dr. Bright, and established upon physiological grounds the function of the pancreas connected with the digestion of fatty matter. Nothing can be more decided than the influence enjoyed by the pancreatic juice in emulsifying fatty matter the instant the two are brought in contact. By this emulsification the fat is reduced to an exceedingly minutely divided state, without any chemical change occurring. According to Bernard, however, when the emulsion, resulting

from the admixture of pancreatic juice and oil, has been placed aside for some hours, it is found that the oil has undergone a chemical modification, and become converted into glycerine and fatty acid. But it would seem from the experiments of others, that this chemical decomposition does not ordinarily take place in the digestive canal, the fatty matter being only there emulsified, or finely divided, so that it may pass by absorption into the lacteals. With this specimen of pancreatic juice that I have before me it is easy to show the effect that is exercised by it during life. On agitating it in a test-tube with some olive oil, a milk-like liquid is immediately produced, which, be it observed, will retain its milk-like character on repose. No such effect is produced by saliva. The oil, by agitation, is reduced to small globules, and distributed through the liquid, but it will soon separate and rise to the surface on being placed aside to repose.

It is a well-known fact that after the ingestion of fatty matter by one of the mammalian animals the absorbents derived from the intestinal tract are filled with an opaque milky fluid; and hence their name—lacteals. Experiments were performed by Bernard to ascertain if the absorption of fat was alike in all the vertebrate classes. According to his results it is only amongst mammals that lacteals can be truly said to exist; for the introduction of fat dissolved in ether into the alimentary canal, which so rapidly gives rise to the presence of a milky fluid in the intestinal absorbents of the mammal, occasions no such occurrence amongst the other vertebrate animals. It is, following this physiologist, the portal system that forms the channel through which fat enters the system in the bird, reptile, and fish.

The examination of chyle has shown that the fatty matter which has been absorbed exists in a neutral state. It is simply in a condition of extremely minute division and as such is poured by the thoracic duct into the circulatory system. Unless arriving in considerable quantity in the circulation, it is lost sight of, probably from undergoing saponification and solution, after mingling with the blood. If blood be withdrawn, however, a few hours after the copious ingestion of fat, the existence of this principle in a free state, or simply in a state of suspension, will become manifest by the formation of a white cream-like layer on the surface after the fluid has been allowed to repose. Examined microscopically, this cream-like layer is found to consist of exceedingly minute particles of fat, such as those which constitute the molecular base of chyle.

Having traced the entrance of fat into the circulation, I may now speak of its escape with the urine. It is exceedingly interesting to observe that this alimentary principle resembles

albumen in passing off through the kidneys after a very copious ingestion. I quote from Dr. Bence Jones's work, "On Animal Chemistry in its Application to Stomach and Renal Diseases," that "Tiedeman and Gmelin fed a dog for four days on butter, and killed it three hours after the last meal. The urine was thick; and on being filtered, butter soluble in alcohol was left on the filter. They add: 'one of our pupils who likes fat has frequently found it in his urine.'"

But there is a peculiar morbid state of the system which is attended with the elimination of fatty matter in the urine after its ingestion in the ordinary way with the meals. This complaint—chylous urine—seems to depend upon a defective assimilative action. It is of but rare occurrence, particularly amongst the inhabitants of temperate climates. The urine contains fat in the form of an emulsion, which creates the milky or chylous appearance. But, strikingly enough, the unnatural state does not stop here; for other principles which ought to be retained pass off with the secretion from the kidneys. The urine undergoes spontaneous coagulation from the presence of fibrin. It also contains albumen. And, from a case to which I shall presently refer, it appears that sugar may also be present.

The introduction of oil directly into the circulatory system is attended with the most serious consequences, and the state of the urine it occasions is of interest on account of the same chemical principles having been observed in it as have been noticed in chylous urine.

There yet remains another group of alimentary principles for me to speak of—the saccharine group. This, contributing towards the production of animal heat, has the same destination as the oleaginous; but, there being a sufficient amount of oxygen in the compounds belonging to it to form water with the hydrogen they contain, their combustion, taking weight for weight, will be necessarily attended with the evolution of a less amount of heat.

The sugars and starch form the chief principles belonging to the saccharine group. The sugars require no digestion or special preparation for absorption. Both cane and grape sugar being exceedingly soluble and diffusible will pass with facility through the limiting membrane of the alimentary tract into the circulatory system. To what extent, or whether to any extent, cane sugar is converted into grape sugar before absorption, I am not aware has been shown; but some experiments of Bernard upon horses prove that cane sugar—some, if not all—passes as such into the portal system. From a quarter to half an hour after the ingestion of sugar by horses, Bernard says, "sugar was found in the portal blood, even in the state of cane sugar, just as it

had been taken, for all had not been changed into glucose or grape sugar."

Starch requires to undergo transformation to render it susceptible of entering the system. Starch, as such, it may be stated, is of no use to the animal being, because it cannot be absorbed and appropriated. It refuses to traverse animal membranes. Being easily transformed, however, by certain secretions produced by the digestive apparatus into a diffusible principle like sugar, it is placed in a position for being turned to avail in the processes of life. The human saliva enjoys the property of almost instantly converting starch into sugar; but, curiously to observe, this property is almost peculiar to the human subject. Although, however, the effect is so immediate as it is when acting upon a decoction of starch, yet it is not often that starch is ingested in so favourable a form for rapid metamorphosis; and its period of duration in the mouth is so transitory that it may be assumed, physiologically speaking, that there is not a digestive effect of any material consderation exerted upon starch in the mouth even amongst ourselves The saliva, again, would lose whatever metamorphising influence it possessed, on the stomach being reached and the food mingling with its acid secretion; for the presence of an acid is unfavourable to the transformation of starch into sugar by saliva. Dr. Bence Jones has suggested that the acid itself of the stomach may exert an influence towards converting starch into sugar. And what I witnessed in an experiment of my own not very long ago, corroborates such a view. I had been keeping a rabbit for a few weeks solely on a diet of starch and cane sugar. This food was injected into the stomach through a tube passed down the œsophagus, so that it did not come in contact with the mouth. After death, grape sugar was found amongst the contents of the stomach, although none was contained in the food introduced. There is here, of course, no actual proof, because two materials, each susceptible of transformation into sugar by an acid, were employed; but starch is as readily thus transformed into glucose as cane sugar, and therefore may reasonably be taken as having constituted the source of certainly a part of the glucose encountered. Doubtless, however, it is the pancreatic secretion which, in the natural course of events, forms the chief agent intended for the digestion or transformation of starch. In the first place, the pancreatic juice, not only of the human species, but of animals in general, possesses, like human saliva, a highly transformative influence over starch; next, the conditions in the duodenum are all in the highest degree favourable for transformative action; the strong acidity of the gastric juice has been more or less neutralized by the alkalinity of the bile, the food is delayed in contact with the

secretion during its gradual transit along the intestinal canal, and the temperature is all the while maintained at an equable and elevated degree.

Sugar, whether ingested as such, or derived from the metamorphosis of starch in the alimentary tract, passes by osmosis into the circulatory system, and is carried to the liver. It requires no special manifestation of vitality to bring about the passage of sugar into the circulation, when present amongst the contents of the alimentary canal. Both cane and grape sugar enjoy in a high degree the property of diffusibility, and thus, in obedience to physical laws, will reach the circulation from the stomach and intestine. It would seem from the experiments of Prof. Bernard that this is the only manner in which sugar enters the system. On giving horses a solution of sugar to drink, and destroying life from a quarter to half an hour afterwards, he found sugar in the portal blood, but never, he tells us, did he discover the least trace of saccharine matter in the contents of the lacteals collected between the intestines and mesenteric glands. The absorbent system would thus appear to have the power, not only of picking up certain materials, (oleo-albuminous) from amongst the intestinal contents, but also of refusing entrance to others, although existing in a soluble state. Now, admitting such to be the case—and I see no reason to doubt it—there is, I think, to be discovered in this arrangement a provision wisely harmonizing with circumstances connected with the subsequent disposal of sugar in the system. In anticipation of what I shall shortly have to speak of, I may mention that the information in our possession goes to show that sugar must be conveyed to the liver in order to be of service to the system as an alimentary material. The introduction of sugar into the general circulation is followed by its elimination from the body with the urine. If, then, absorption of sugar took place through the lacteals, as the chyle flows into the general venous system without traversing the liver, there is reason to conclude that such sugar would nearly, if not entirely, all simply pass through the system, and escape with the urine as a useless material.—*Lancet, July* 25, 1863, *p.* 92.

122.—NOTES REFERRING TO INVALIDS WHO ARE ABOUT TO PROCEED UP THE NILE.

By Dr. A. Leith Adams, 22nd Regiment.

[The following paper is intended by the writer simply to record the result of casual observations made during a tour in Egypt, and especially to point out the circumstances likely to interfer with the comfort and well-being of the invalid.]

All experience tends to show that about the middle of October is soon enough for the invalid to make his appearance in Egypt, and the middle or end of April ought to see him clear of Alexandria. Three different descriptions of persons visit the Nile during the winter months: 1st. The healthy, for pleasure. 2ndly. Patients suffering from general derangement of health, but only in a degree which does not absolutely require a companion. I would remark at the outset, with reference to this second description of person, that as he may often go to Egypt alone, and trusting (perhaps on the score of economy) to be able to join a boat party at Alexandria or Cairo, he cannot be too discreet in making his choice of companions, and ought to see that he does not join those who are going for mere pleasure and amusement. I am aware of grievous injury having arisen to delicate young men in consequence of having overtaxed their strength in this way.

The European Hotels in Alexandria and Cairo have been remarked on by all medical writers as being very comfortless, and my experience is the same. The cheerless and dirty condition of the Alexandrian hotels ought to render the invalid's stay a short one, and (unless, perhaps, being in general quieter, and more removed from the din and bustle of a crowded city) those of Cairo are little better. No class of people are more sensible of the defects of the Egyptian hotels than the overland passengers, who have all one story to tell of the bad arrangements at present in force. Speaking in a sanitary sense, to the many invalids homeward bound from India, I can conceive nothing more trying, or more likely to aggravate their condition, than the tedious railway journey and stoppage at Cairo. The former might, with proper management, be curtailed to nearly half the time at present expended, and a proper refreshment-room at the Cairo station would render it quite unnecessary for the traveller to make any further stoppage between the Mediterranean and the Red Sea.

To return to our subject. On arriving at Alexandria, the invalid has three ways open to him, either to take a boat and proceed up the river at once, or to choose a boat, but engage it from Cairo, proceeding thence by railway. There are, however, abundance of boats at the latter city. Perhaps, on the whole, the better plan for those in a really weak state is to hire neither dragoman or boat until they arrive at Cairo.

With reference to the first, it is of essential importance that a man of reputed good character should be obtained, and it would be well if the invalid could discover beforehand the names of the best Maltese and Egyptian dragomans. The dragoman need not, however, be definitely engaged until the boat has been fixed upon, which ought to be inspected with

care, to see that the *Satara* (outside curtain) covers all the windows, and that the glass and lattice windows fit properly, and the furniture is complete. Boats are greatly to be preferred which have a canopied and cushioned seat outside, in front of the saloon; there the invalid can sit when the wind or sun prevents his going on deck, This arrangement is invaluable, and especially during the cold northerly winds in January and February. The crew, averaging from ten to fourteen, ought, with the exception of the cook-boy, to be strong, able-bodied men. On these seemingly trivial points much of the comfort of the invalid will depend.

There are different ways of hiring boats; first, by the trip, *i.e.*, arranging with the dragoman to take you at a fixed price to and from the first or second cataract, allowing a certain number of days to see the antiquities, &c., on the way. By this plan the traveller selects the boat, but he is left entirely at the mercy of the dragoman, whose interest is, of course, to get through the journey as soon as possible. I never should recommend this procedure but to the strong, or, in fact, any plan which does not make the invalid master on board. Secondly, by hiring the boat and provisioning it oneself. This is a troublesome business, and cannot be performed but by those who are accustomed to travelling in that particular way, or are disposed to take the trouble and have the requisite strength to enable them to make arrangements with the merchants in the bazaars. Thirdly, the dragoman, to undertake the whole business at so much a head per day, and on the whole, considering the usual run of these persons, and cooks, this is unquestionably the most desirable plan, at the same time it ought to be especially noted in his contract, that unless at the usual stated places, where the crew replenish their stores, he is not to require any delay on his own account. The invalid of course will communicate with the dragoman, as to the articles he desires, and it would be well to see that they are on board before sailing. All European provisions, such as wine, beer, preserved meats, sago, &c., are procurable at Cairo, at high prices, which influence of course the dragoman's rates. There are few treatises on Egypt which do not detail pretty fully the probable expenditure of the Nile voyage, now, unfortunately, becoming more and more expensive, so much so, as to make it a matter of grave consideration with the physician when he finds it advisable to recommend the climate to his patient. The items of travelling expenditure to Egypt and hotel charges may in general be put down at the same rate as in Europe. The Nile voyage may be reckoned for a party of three at from £100 to £120 per month. Of course it may be done for somewhat

less, and there are gradations according to the scale of comforts required.

In making arrangements with reference to messing, the invalid ought not to omit the *geshteh*, the Devonshire cream of the East, if it agrees with him. It is especially nutritive, and should form part of his breakfast, where it might be a substitute for the native butter, which is not to be recommended.

The healthy as well as the weak are subject to diarrhœa on arrival in Egypt, a circumstance all experienced observers have also noticed with reference to other countries. The change from the daily routine and established habits have very much to do with it, and of course persons of a weak digestion are apt to have one or more of their symptoms aggravated. In the East the Nile water is looked upon by many as the great cause, but few think of the other adjuncts, such as divers cooked articles of food, &c., to which they have not been before accustomed, and which the sharpened appetite of the new comer is apt to indulge in unusual quantities.

The physician in my opinion can recommend no better advice to his patient on this head than that so lucidly described by Sir James Clark in his admirable work on climate; I would moreover advise that the invalid should live sparingly for the first few days, and imitate as much as possible the food and cooking to which he was accustomed previously, being at the same time careful to notice the first signs of derangement in digestion; with these precautions I think he may safely drink the cool and delicious water of the Nile. The physician will do well to find out from his patient, before finally deciding on the Egyptian climate, that he is not one of those idle, cheerless, and unhappy beings who has no resources within himself. To such a person the Nile voyage will soon become tedious, and most likely unprofitable. This is more especially the case with certain dyspeptics, who frequently find themselves worse instead of better at their journey's end; indeed, those in rude health who have no active pursuits, mental or bodily, soon get tired of the monotony of the Nile boat-life, and the humdrum existence which savours little of the enjoyment of society; nevertheless, he who can combine instruction with amusement, need never know a dull moment.

Although the river scenery is constantly changing, there is often considerable sameness; at all events, a supply of books is a desideratum. The naturalist may

> "Converse with Nature's charms, and view her stores unrolled."

the draughtsman will have ample scope for his pencil, and may feast his fancy among the noblest of old world ruins. The latter can easily be visited on donkeys, a gentleman and a lady's

saddle being usually part of the dragoman's outfit. There is a caution, however, that ought always to be given, which is, Beware of the cold mephitic air and draughts in many of the temples and tombs. Aboo Simbull, in Nubia, and the Tombs of the Kings at Thebes, ought not to be visited by phthisical patients, especially persons subject to bronchitis. With reference to clothing, it is essential that the invalid be supplied with changes of both light and warm descriptions; these he may require to don and doff often twice during the day.

Unless well wrapped up, and under an awning, it is not advisable for very delicate invalids to leave the saloon after sunset. During November and the three following months dew falls profusely at night all over the valley below Thebes, commencing at 9 p.m. It is, however, usually dispersed before 9 a.m., and, in the shape of fleecy cirri, floats at high altitudes in an otherwise clear and delightfully serene atmosphere. In Nubia, as the cultivated tracts disappear and the desert approaches the river, the dew all but vanishes, and thus, after passing the first cataract, the climate, from being more or less moist, becomes exceedingly dry. Before starting, it will be well to hang about in the river for a day or two, to see that "all is right," and especially that the boat is made comfortable and the provisions safely on board. Some invalids sail at night when the wind is favourable; but, as time ought to be no object, the preferable plan, I conceive, is to halt at 9 p.m., and start after breakfast. By this means he enjoys the scenery, and is saved the annoyance of a "creaking helm" at night. The boat ought always to be placed so that the morning sun will shine on one of its sides for two hours before the invalid arrives in the saloon, the lattice windows of which have been opened and the satara coiled up at sunrise. The object of this is to dispel the sharp morning air, which to some may appear an insignificant proceeding, but I feel persuaded that no invalid with susceptible air-passages, who has once experienced the raw, comfortless feeling of getting out of bed and dressing with an Egyptian north-wind blowing upon his boat, but will appreciate the above recommendation. Again, on the downward voyage, when the north-wind blows, cover the stern windows with the satara, and allow the boat to drift end on with the stream, whilst the patient sits in his sheltered seat under the verandah, in front of the saloon. I have a vivid recollection of a case of tubercular disease of the lungs very little benefited by the Nile voyage, from the patient not having been instructed beforehand to see to many of the little details I have just mentioned. A comfortless boat, without an outside curtain, full of draughts from badly-fitting doors and windows, obliging the invalid to shut herself up during windy weather, or even take to bed, is

enough to spoil all the good intended. I was not therefore surprised to be told by the above patient that the "Nile had done her no good;" and I dare say long before this, the medical adviser in England has been told so likewise, little knowing that his patient went the wrong way to obtain the desired benefits of the climate. Here and there, up to the second cataract, we notice the grave of some poor patient, who would have done better to have stayed at home. Such cases are not frequent, however, and although they have often been put down to injudicious advice on the part of the medical adviser, it is well known in all countries frequented by invalids, that great numbers of patients will persist of their own accord in making pilgrimages to such places, when at the best they can only be "hoping against hope." The grand advantage of the Egyptian climate in winter is its daily serenity and sunshine; however strongly the wind may blow, a sheltered nook, after 9 or 10 a.m., will always be a sunny one. To those therefore with susceptible air-passages, it is a matter of no little importance to be aware of this circumstance, and able at the same time to have certain simple measures at their own command, which will modify, in a great degree, the deleterious influence of the weather. There can be little doubt that the climate of Upper Egypt, Nubia, and the desert, from their superior dryness, are better suited for the generality of tubercular patients than that of the Delta and the cultivated tracts of the low country. Much, however, depends on the morbid changes which have taken place, or are in course. But Nubia appears to me the climate, of all in the Nile Valley, between Alexandria and the second cataract, that is most likely to agree with phthisical patients, to many of whom the sharp and bracing air of the desert is too strong. Accordingly, I would recommend the patient, if he feels benefited by the voyage on arrival at Asowan, to push on to the second cataract, and tarry as long as the weather will permit. He may return to the first cataract towards the end of February, and *bask* for a few days in the sunny creeks, among the rapids; there he can enjoy fine scenery, and a delightful climate. If he is able and inclined to stroll through Philæ's interesting ruins, the boat may be anchored in the sheltered nook, just under the noble old temple of Æsculapius,—methinks no unsuitable place for him who feels the better for his Nubian tour;—*more poetæ Venusiani*, he may even sacrifice a cock!

In concluding these stray notes, in common with those who look on Egypt from a medical stand-point, I cannot help expressing a hope (however impracticable it may at present appear) that when the resources of the "land of plenty" have been fully developed, when the talked of Central Egyptian Railway has been completed (not the Suez Canal!), we shall see

European dwellings among the palm groves of Sioot, Thebes, Asowan, Streeni, Wadee, Halfih, &c., and hundreds of weary souls gaining new life and vigour from the climate of sunny Egypt; that, however, implies a state of civilization, which is never likely to be attained, so long as a Moslem is seated on the throne of the Pharoahs!—*Medical Times and Gazette*, *July* 18, 1853, *p.* 62.

123.—SYPHILITIC TUBERCLE OF THE EYELID: ITS DIAGNOSIS AND TREATMENT.

By J. Vose Solomon, Esq., Surgeon to the Birmingham and Midland Eye Hospital.

A disease for which the common tarsal tumour—the grando or chalazion of technologists—may be mistaken, is syphilitic tubercle of the lid.

The tarsal border in this affection becomes the seat of a well defined and hard tumour, in the centre and free border of which a yellowish spot is apparent. At this stage the tubercle bears a rude resemblance to hordeolum or stye.

The yellow spot sooner or later ulcerates; and if the molecular changes be not controlled by mercury, a deep notch is made in the border of the eyelid, and remains as a permanent deformity. The ulcer is at first superficial and of a dusky yellow colour, and the lid-tissue around is widened out by a circumscribed and dense exudation, as in the Hunterian chancre.

Case 1.—My introduction to this form of syphilis of the lid was made many years ago, in the case of a married lady, who consulted me respecting a tumour such as I have described. One of her eyelids was disfigured by a notch, which she told me marked the site of a tumour similar to the one which now concerned her, and which had run a natural course. The disease was not "tarsal tumour," for this never ulcerates or suppurates at the free margin of the tarsus. The chronicity of the disease and appearance of the yellow spot forbad the idea of its being hordeolum. On calling upon the surgeon who attended the family, I learned from him that the patient had been infected with syphilis by her husband two years ago, and had been treated for secondary symptoms.

The following case affords a good clinical picture of the early stage of syphilitic tubercle.

Case 2.—A young woman, aged twenty (married) applied at the Eye Hospital on Oct. 21, 1856, with a hard tubercle on the edge of the right upper lid close to the outer canthus, and a similar tumour on the corresponding situation of the left

lower lid. They were not inflamed; but presented, upon the integument at its line of union with the muco-cutaneous surface of the tarsus, an excoriated ulcer, of small size and oval shape. The ulcer on the right side was covered by a sticky secretion of yellowish colour.

The face of the patient was disfigured by syphilitic papulæ.

The velum palati was œdematous, the tonsils foul and deeply ulcerated, and one side of the tongue presented a blanched patch, in the centre of which was an ulcer. Plummer's pill was ordered.

In three days (Oct. 24), the right lid was much inflamed and swollen. The ulcers had extended; they were oval, and covered by a dirty gray crust (epithelial scales), on the removal of which a tawny surface was exposed.

Treatment was now directed to the relief of the inflammation of the integument; and gray powder in combination with the extract of conium was substituted for the Plummer's pill, which did not appear to agree.

℞. Hydrargyri cum cretâ, ext. conii, āā gr. v. Fiant pilulæ ij ter in die sumendæ.

The importance of abstinence from alcoholic stimulants, the necessity of nutritious diet, and of keeping the body warm, were fully explained to the patient.

My notes for Oct. 28 state:—"There is less inflammation of the lid, the tubercles are smaller and softer, but the ulcers remain unchanged. The woman looks better, and says she feels so."

In six days afterwards (November 3), the thirteenth of the treatment, the ulcers had cicatrised, and the surrounding hardness had disappeared. The appetite was good, and the complexion wore the aspect of health. It was a long time, the poor woman said, since she had felt so well as now. She remained under observation for a time, taking small doses of the mercury and iodide of potash. There was no relapse.

For the cure of this disease, all that is needed is a course of mercury adapted to the constitutional power and idiosyncrasy of the patient. The supervention of inflammation is to be met by the application of such remedies as would be appropriate if there were no syphilitic complication.

The inflammation should not be considered as belonging to the venereal complaint, but as an independent disease; hence a leech or two and an evaporating lotion may be necessary in addition to the mercury.

In syphilis of the eyelid I have not been able to satisfy myself of the value of yellow or black wash as a topical application. The occasional touching of the sore with a crayon of nitrate of silver, in combination with nitrate of potash, is

useful. A solution of nitrate of silver in distilled water, to which so much glycerine has been added as will give a coating to the ulcer, is a good form of application.

I have encountered a difficulty in the administration of mercury in two cases. Both were females: one was phthisical; the other suffered from tertiary osseous symptoms, and was old and feeble.

Cancer of the eyelid is to be distinguished from syphilitic tubercle by its history, the absence of secondary symptoms; by the accompanying tumefaction being less, and of a different feel when manipulated; by the inefficiency of mercury; and by the results of a microscopic examination of the diseased structure. I have not laid stress on the generally more advanced age of cancer patients, because I have seen a flat syphilitic tubercle on the integument of the eyelid of a woman who was nearly sixty years of age, and which rapidly disappeared under mercurial treatment; nor upon slight enlargement and tenderness of the preauricular gland, as they are common to syphilis, cancer, and hordeolum.

Case 3.—A woman, aged twenty-five (married to a policeman), of strumous diathesis, complexion rather white, moderately plump, presented herself on March 17, 1863, with a red swelling of the lid, situated very near to the right tear-sac, and was prescribed for by Mr. Bowen, our intelligent house-surgeon.

On March 20th, I saw her for the first time, and noted the following symptoms. The integument of the inner half of the right lower lid is shiny and of a slightly coppery hue; and its surface slightly uneven. On taking the lid between the finger and thumb, a swelling occupying nearly one-half of the lid, of soft cartilaginous feel, and slightly lobulated in front, is discovered; to the touch it closely resembles the remains of a large Hunterian chancre of the prepuce, for which mercury has been somewhat recently administered with effect. The margin of the swelling can without difficulty be clearly defined, there is no sort of blending with the surrounding tissue.

The voice of the patient is "veiled." In the base of the uvula is a small hole with a sharply defined and rounded edge; there is no secretion from it; the velum palati is white, and chronically œdematous; the right pillars of the fauces are in the same condition, and there is a little notch in the centre of the free margin of the anterior pillar, marking the seat of a cicatrised ulcer. These parts present a diffused pale pink shade.

The patient denies all knowledge of a primary sore of the genitals, and the existence at any time of leucorrhœa or ardor urinæ. The throat has been affected upwards of six months, and the eyelid about three months and a half. She has had

medical treatment, which does not appear to have included mercury in any form, or specific treatment of any sort.

The disease commenced at the inner end of the lid, and was believed to be a stye, but it never suppurated. It was at one time inflamed, and became of a large size; a leech was applied with great relief, and the swelling diminished much. At the present time, the part is not inflamed or tender, and the conjunctiva is healthy. She was ordered to take every night a pill containing hydrargyrum cum cretâ and extract of conium, two and a half grains of each; and a drachm of syrup of iodide of iron in a cup of milk three times daily.

March 31st. The tumour is nearly gone; the copper coloured stain continues, as on the 20th, well marked. The patient is looking more healthy; she says she feels better than she has done for five years, and that her appetite is now excellent. Four pills only have been taken.

The preceding case affords an example of tertiary syphilis, of the same nature as the indolent nodes (lumps?) that sometimes form in the skin of the arms or its subjacent cellular tissue, and which are much benefited by preparations of iodine and sea-air.—*British Medical Journal, April* 18, 1863, p. 394.

124.—AN ATTEMPT TO RESTORE TO ITS NATURAL APPEARANCE A PUTRIFIED DEAD BODY, IN ORDER TO PROVE ITS IDENTITY.

By Dr. B. W. Richardson, M.A., Senior Physician to the Royal Infirmary for Diseases of the Chest.

[The following successful attempt to restore to its natural appearance a putrified dead body, in order to prove its identity, reflects the greatest honour on the enterprising and talented physician who conducted it. The facts of the case were these: a women named Emma Jackson, was murdered by having her throat cut, but the murderer, who had been seen with her by three witnesses a short time before, escaped and could not be found. Some time afterwards the body of a man was dragged from the Thames in an advanced stage of decomposition. His features being unrecognizable, the witnesses could not swear whether this was or was not the man seen in the company of the murdered woman. The idea occurred to Dr. Richardson that the appearance of the body might be so altered as to enable the witnesses to speak to its identity.]

At half-past ten on Saturday we were taken to the dead man, who was lying in a shell in the dead-house in Darby-street, Tower-hill. He was dressed as he was when taken out of the water. His body generally, with the exception of the hands,

was deeply discoloured, and the face was so changed that it was quite impossible to form any opinion respecting either its colour or feature: it was as black as the face of the darkest negro, and had it not been white when he was taken out of the water I should say that the man would have been returned as a negro. The lips were enormously distended, and the nose was scarcely visible; the cheeks and eyelids were also greatly distended. In fact, the putrefactive changes were so advanced that it required some little determination to proceed. Following, nevertheless, the course I had marked out, we immersed the body in water, and then added to the water twenty pounds of common salt; we also added gradually, in the course of the operation, one pint of common hydrochloric acid; and the body was allowed to remain under this solution for two hours. The object of this part of the process was to reduce the swelling of the features by exosmosis. The shell, being water-tight, answered as a bath.

Meanwhile we charged a pail of water with fresh chlorine, and then, lifting the face out of the water in the shell, treated it with the chlorine water. I also directed a stream of chlorine gas for some time upon the face. The object of this part of the process was to restore the white colour.

A little before one o'clock both of the intentions we had in view were realized to a considerable degree. The tumefaction was relieved; and the face, from the deepest black, had become of the cast of light clay, common wood-ash, or the darker sort of straw-paper. When the chlorine in vapour was passing over the face the skin approached to white, but so soon as it was withdrawn the change to clay-like hue returned. So much was now accomplished that we were able to form a fair estimate of the man. We found that he was evidently a young man, not more probably than twenty-one years of age; he had a short feeble moustache; his lower lip had a short soft beard that had not been shaven, and his whiskers corresponded; his face was naturally round and full, and indeed his body generally was well nourished.

At one o'clock we left, and returned at two. We had arranged that a stream of chlorine should continue to play over the face in our absence, but, as we had no one to leave in charge, the gas had become exhausted, and the face was a little darker when we returned.

Pursuing still the course I had prearranged, we opened the body. We found the viscera but little decomposed, and natural; the heart was empty and flaccid; the lungs free from congestion. We fixed a large tube in the aorta, through the left ventricle; and Dr. Edmunds tied the aorta in the thorax, so as to prevent any passage of fluid to the lower part of the body, and to the abdominal viscera. Then we injected a solution,

consisting of chlorine water, chloride of zinc, and a little sesquichloride of iron. The object in this instance was to impregnate the tissues from within with the decolorizing agent, and to reduce the tumefaction. On forcing the injection we found that great escape took place through the vessels that had been divided in opening the thorax. We therefore withdrew the tube from the aorta, and as the face was the part chiefly requiring attention, Dr. Edmunds laid bare the common carotid on the right side and a small nozzle from the syringe was introduced into that vessel and tied. It must be understood that much care was required in forcing the injection through structures so decomposed and yielding, and that we dare not push this part of the operation too far. Had we used much force we should have produced extensive infiltration through the broken capillaries, and have destroyed the facial structures altogether. So soon, therefore, as the face was subjected to slight tension the injection process was stopped. The time had now approached for the sitting of the jury at half-past four p.m. We allowed all the water to drain away, drenched the body with pure water, and left it with the face covered with a piece of thick cloth, on which was poured a little hydrochloric acid and methylated alcohol. The face at this time was of a clayey colour, and a little more full than natural; and although we felt that we had not brought it up to its perfect natural appearance, we believed that it might be recognizable by any one who had seen it during life, and especially that it was a face which a witness could swear was not that of any particular person whom he remembered, if there were not strong natural resemblances between the two.

The result indicated that we had effected even more than we had anticipated, and that, if we had not succeeded to the perfection we could have wished, we had fulfilled the practical part of our mission and all that was demanded of us; for the three witnesses who were there either to confirm or disprove the hypothesis that the man before them was the man last seen with the murdered woman, each and all swore without hesitation, on their second view of the unknown man, that he was *not* the assumed murderer.

Margaret Curley, of 4, George-street, St. Giles's, swore that she had examined the deceased since the operation had been performed, but that she did not recognise him as a person she had seen before, nor as the person suspected; Charles Ansley, of 20, Peter-street, bore the same testimony; and H. Stoke, the shoe-man, swore definitely that, from his inspection of the deceased since the operation, he was sure that he was not the man whom he had seen with Emma Jackson. The Coroner, in summing up, observed that the experiments made having

enabled the witnesses to swear that the deseased man was not the man accused of the murder, they had fulfilled their purpose, and the jury returned a verdict in accordance with the evidence.

Reflections and suggestions.—The fact that in a case so extreme as the one named, science has come in to render essential aid to justice, affords, I hope, subject for thought and renewed effort in the same direction. I am far from considering that we ought to stop where we have thus begun. I look upon this case, in fact, as a mere first and experimental trial, which followed up will lead to great perfection in one department of medical jurisprudence; and I feel, consequently, that I cannot conclude this paper better than by pointing out what improvements in the process have been suggested to me by the experience detailed above.

1. In respect to time. On another occasion I would ask to be allowed at least twenty-four hours for the performance of the process. The period of six hours was insufficient for the full development of the required changes.

2. I should proceed by stripping the subject of all apparel.

3. After this the subject should be placed in a water-tight shell, in which a large tap for escape of water should be inserted, and the body should be thoroughly washed with water.

4. After the washing the body should be covered with water, and held beneath it by a few cross bars of wood. Then the lid of the shell should be temporarily but effectually closed down, and two openings should be made into the lid; through one of these openings the free end of a tube, connected with a chlorine flask, should be passed beneath the surface of the water; while from the other opening should come another tube, the free end of which should turn over into a glass globe of water. These preliminaries arranged, fresh chlorine should be driven in until the water within is saturated by it, the fact of saturation being determined by the passage of chlorine through the escape-tube. When the water around the body should thus become charged with chlorine, the openings in the lid of the shell should be closed, and the whole should be left undisturbed for twelve hours.

5. On opening the lid after the interval of time named, common salt should be added to the water, until the hydrometer should stand several degrees above the specific gravity of the blood; the specific gravity of 1100 would answer for the solution. In this solution the body should remain immersed for twelve hours; the water should then be drawn off and the body examined.

[If there were no deep decomposition and discoloration, the body, I believe, would now be ready for identification; but if

the putrefaction were very deep-seated, it would be requisite to proceed further.]

6. If necessary, open the trunk of the body at this point, and make any post-mortem observations that may be required. The head should not be opened at this stage.

7. After the post-mortem examination, in order to restore a more natural expression to the face, solutions should be injected into the external carotid of each side. The form of solutions I should suggest in another case would be—

(*a*) Water saturated with chlorine, and charged, in addition, with tincture of the sesquichloride of iron in the proportion of two fluid drachms to the pint.

(*b*) Common fresh milk saturated with common salt.

Of the injection *a*, I would recommend that from two to three ounces should be slowly injected on each side, to be followed, without removing the nozzle of the syringe from the vessel, by so much of solution *b* as should cause the slightest possible tension on the tissues of the face.

Lastly, if it were requisite to retain the body for some time, it would be advisable to cover it with wood spirit, containing one drachm to the gallon of the tincture of sesquichloride of iron, and to exclude it from the air.

In offering these suggestions, I beg that they may be accepted as open to revision: the principle recognised, the details are certain, under experiment, to be simplified and improved.—*Lancet, May* 16, 1863, *p.* 550.

125.—ROYAL HUMANE SOCIETY'S INSTRUCTIONS.—DIRECTIONS FOR RESTORING THE APPARENTLY DEAD.

I.—If from Drowning or other Suffocation, or Narcotic Poisoning.—Send immediately for medical assistance, blankets, and dry clothing, but proceed to treat the patient *instantly*, securing as much fresh air as possible.

The points to be aimed at are—first and immediately, the *restoration of breathing*; and secondly, after breathing is restored, the *promotion of warmth and circulation.*

The efforts to restore life must be persevered in until the arrival of medical assistance, or until the pulse and breathing have ceased for at least an hour.

Treatment to restore natural breathing.

Rule 1.—*To Maintain a Free Entrance of Air into the Windpipe.*—Cleanse the mouth and nostrils; open the mouth; draw forward the patient's tongue, and keep it forward: an elastic band over the tongue and under the chin will answer this

purpose. Remove all tight clothing from about the neck and chest.

Rule 2.—*To Adjust the Patient's Position.*—Place the patient on his back on a flat surface, inclined a little from the feet upwards; raise and support the head and shoulders on a small firm cushion or folded article of dress placed under the shoulder-blades.

Rule 3.—*To Imitate the Movements of Breathing.*—Grasp the patient's arms just above the elbows, and draw the arms gently and steadily upwards, until they meet above the head (this is for the purpose of drawing air into the lungs); and keep the arms in that position for two seconds. Then turn down the patient's arms, and press them gently and firmly for two seconds against the sides of the chest (this is with the object of pressing air out of the lungs. Pressure on the breast-bone will aid this).

Repeat these measures alternately, deliberately, and perseveringly, fifteen times in a minute, until a spontaneous effort to respire is perceived, immediately upon which cease to imitate the movements of breathing, and proceed to *induce circulation and warmth (as below).*

Should a warm bath be procurable, the body may be placed in it up to the neck, continuing to imitate the movements of breathing. Raise the body in twenty seconds in a sitting position, and dash cold water against the chest and face, and pass ammonia under the nose. The patient should not be kept in the warm bath longer than five or six minutes.

Rule 4.—*To Excite Inspiration.*—During the employment of the above method excite the nostrils with snuff or smelling-salts, or tickle the throat with a feather. Rub the chest and face briskly, and dash cold and hot water alternately on them.

*** The above directions are chiefly Dr. H. R. Silvester's method of restoring the apparently dead or drowned, and have been approved by the Royal Medical and Chirurgical Society.

Treatment after natural breathing has been restored.

Rule 5.—*To Induce Circulation and Warmth.*—Wrap the patient in dry blankets and commence rubbing the limbs upwards, firmly and energetically. The friction must be continued under the blankets or over the dry clothing.

Promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, &c., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet. Warm clothing may generally be obtained from bystanders.

On the restoration of life, when the power of swallowing has returned, a teaspoonful of warm water, small quantities of wine,

warm brandy-and-water, or coffee should be given. The patient should be kept in bed, and a disposition to sleep encouraged. During reaction large mustard-plasters to the chest and below the shoulders will greatly relieve the distressed breathing.

II.—If from Intense Cold.—Rub the body with snow, ice, or cold water. Restore warmth by slow degrees. In these accidents it is highly dangerous to apply heat too early.

III.—If from Intoxication.—Lay the individual on his side on a bed with his head raised. The patient should be induced to vomit. Stimulants should be avoided.

IV.—If from Apoplexy or Sun-stroke.—Cold should be applied to the head, which should be kept well raised. Tight clothing should be removed from the neck and chest.

Appearances which generally indicate death.

There is no breathing or heart's action; the eyelids are generally half-closed; the pupils dilated; the jaws clenched; the fingers semi-contracted; the tongue appearing between the teeth, and the mouth and nostrils are covered with a frothy mucus. Coldness and pallor of surface increases.—*Med. Times and Gazette, Oct.* 3, 1863, *p.* 364.

126.—LIQUOR BISMUTHI.

Most practitioners, we believe, agree in opinion as to the special value of bismuth in painful affections of the stomach, however much they may differ as to the nature of the pathological conditions giving rise to these very common painful states of the organ. We have hitherto been confined to two preparations—the trisnitrate and the carbonate. Both these are insoluble powders, bulky and inconvenient, inasmuch as a sufficient dose cannot be made into one or two pills.

Mr. Schacht, of Clifton, has succeeded in preparing a solution of bismuth, which is uniform in composition, stable, miscible with water or other fluids without precipitation, and efficient in small doses. It appears to us a most convenient form for the exhibition of the remedy. This solution is quite transparent, with a slight alkaline reaction; and although it contains only eight grains of oxide of bismuth in an ounce, a fluid drachm for a dose is found to be equivalent to a full dose—fifteen or twenty grains—of the insoluble trisnitrate. Mr. Schacht states that before he ventured to introduce the liquor bismuthi to the profession generally, he had its efficacy tested by four years' experience of the practitioners of his neighbourhood.

Dr. S. Martyn, Senior Physician to the Bristol General Hospital, says, "For several years past in prescribing bismuth,

I have used almost exclusively the solution made by Mr. Schacht, of Clifton. It has seemed to me to act better than the old forms. I find it allay pain in acute irritability of the stomach (without nausea or much acidity), and especially in that which remains after ulceration. In hospital practice I have observed remarkable ease produced by it when given quite alone—i.e., simply diluted with water; while it was always much more satisfactory to me to use a fluid of agreeable taste than a cumbrous powder, imperfectly suspended, and not of very certain composition."

Mr. Schacht's liquor bismuthi is unquestionably an "improved preparation," and will assuredly be adopted by the profession.—*Lancet, July* 11, 1863, *p.* 49.

127.—CINCHONINE.

Many of our readers will have observed that recently a salt of cinchonine, the hydrochlorate, has been brought forward and recommended as a substitute for the sulphate of quinine, and alleged to be equally efficacious as a remedy in doses one-third larger than quinine. As its price is less than half that of sulphate of quinine, it is worthy of being fully tested in practice; but we need scarcely add, its substitution for quinine when the latter is prescribed would be highly reprehensible. Its physical appearance is, however, so similar, that it behoves those who dispense their own medicines to be on their guard. We are convinced that no one would more strongly condemn any such unfair proceeding than the highly respectable firm who manufacture both. The detection of the fraud, or mistake, is, however, very easy. Dissolve about a grain of the salt to be examined in two drachms of water, with the addition of three drops of dilute sulphuric acid, in an ounce phial. Then drop into the solution five or six drops of solution of ammonia. A precipitate will form whichever alkaloid is present. Now add two drachms of sulphuric ether, and shake the phial well. If the precipitate dissolves it is *quinine;* if it remains undissolved it is *cinchonine.—Lancet, July* 11, 1863, *p.* 49.

128.—CASE OF POISONING BY CHLOROFORMIC ANODYNE.

By Dr. George Harley, Professor of Medical Jurisprudence in University College, London.

The following case possesses several points of interest:—1st. The novelty of the poison. 2nd. The peculiarity of its symptoms. 3rd. The recovery after so large a dose. 4th. The mode of treatment.

On January 10th, 1862, at eleven o'clock a.m., Mary Anne M'G. had given to her by mistake for a black draught, six drachms of a new remedy called chloroformic anodyne. She immediately felt sick, and vomited. Before ten minutes had elapsed from the time she took the medicine stupor supervened, and so suddenly indeed, that her head dropped into the basin into which she was vomiting. Mr. Kitelee was at once sent for, and on his arrival he found the patient perfectly insensible, the pupils contracted, the face livid, and the breathing stertorous. With the aid of Mr. Simpson (who was also called to the case) he applied the stomach-pump, and ejected the remainder of the poison about two hours after it had been swallowed. As, notwithstanding the treatment, the patient became worse, and appeared to be sinking, Mr. Kitelee requested me to meet him in consultation. On my arrival at about two o'clock, I found, in addition to the symptoms already described, that the pulse was no longer perceptible at the wrists, the patient's face was perfectly livid, and the respirations were reduced to six in the minute. The surface of the body was also beginning to feel cold. Artificial respiration was at once commenced by interrupted pressure on the thorax. A pint of hot coffee, containing three drachms of spirit of nitric ether, was injected into the stomach. In about fifteen minutes the pulse became perceptible at the wrists, and the breathing increased to ten respirations in the minute. Artificial respiration was now discontinued, and a constant stream of cold water applied to the head. The effect of the latter was almost magical. The pulse got quicker and stronger; the respirations regular, and almost natural as regards number (sixteen to eighteen per minute). In twenty-five minutes after commencing the cold douche the girl's nose burst out bleeding, and immediately afterwards she began rubbing her face with her hand, but in all other respects she still appeared insensible. The cold affusion to the head was now discontinued, but in three or four minutes it had to be recommenced, as the patient had again become comatose and motionless. The reapplication of the water soon restored the power of moving not only the arms, but also the legs, and she began making efforts to avoid the water falling on her head, as if it were painful to her. The coffee and spirit of nitric ether were repeated. After two hours' application of the douche patient had so far recovered as to be able to reply to questions like a half-waking person, or, perhaps, more properly speaking, like a drunken man.

At six p.m., seven hours after the administration of the drug, the pupils were a little less contracted, the pulse abut 70, and the girl was considered out of danger. At nine p.m., she had a relapse of insensibility, and the douche had again to be

applied, with slight interruptions, for nearly forty minutes. During the night she was occasionally shaken, when her sleep appeared to be too profound, and hot bottles and friction had frequently to be resorted to in consequence of the reduced temperature of the body.

On the following day I found the patient listless and drowsy. Her mother stated that she had got up for a minute, but was obliged to be immediately put to bed again as she fainted. This occurred on one or two occasions, and, according to the mother's account, the girl had even fainted with her head upon the pillow. The pupils were still very much contracted and quite insensible to light; pulse 104. She answered questions, but only by a yes or no. Her breath smelt strongly of the poison.

The patient remained more or less under the influence of the drug for fifty-four hours after its administration, but at the end of that time she was able to get up and walk across the room. From this time her recovery, Mr. Kitelee informs me, was uninterrupted, except that she suffered for about ten days from a slight attack of bronchitis, probably induced by the applica- of the cold water.

The chief ingredients of chloroformic anodyne are, I believe, simply a strong solution of opium, some chloroform, and a few drops of hydrocyanic acid. The prussic acid odour was quite perceptible in the liquid ejected from the patient's stomach.

In combining the spirit of nitric ether with the coffee a double advantage was gained—first, it acted as a stimulant; and, secondly, as a diuretic, and thereby materially assisted in the elimination of the poison; but to the application of the cold affusion to the head the patient's recovery was, without doubt, in a great measure due.—*Lancet*, *July* 4, 1863, *p.* 7.

129.—ON THE TREATMENT OF CASES OF POISONING.

By Dr. W. R. Hatrick, Fellow of the Faculty of Physicians and Surgeons, Glasgow.

[This paper is founded on notes of twenty cases of poisoning which have occurred to the author. Eleven of the cases illustrate the different stages of laudanum poisoning. Three of these proved fatal, and lead to the inference, so far as the entire number go, that when the patient is seen in the first stage of excitement, or in the second period of drowsiness, and vomiting excited within one or two hours after the ingestion of the poison, recovery may be looked for. In two of the cases in which the stomach-pump was employed two hours after the ingestion of the poison, the fluid withdrawn was still

brown-coloured from contained laudanum. Dr. Hatrick considers that if complete coma has supervened, or remedial measures been much longer than two hours delayed, the case will probably terminate fatally; especially if the quantity taken has exceeded four drachms of laudanum, or ten grains of opium. In eight the symptoms of excitement or sopor commenced considerably within an hour. Two of the cases were fatal within a period of five hours. We pass on to the treatment followed.]

Emetics of various descriptions had been administered in the above cases of poisoning. If the patient is seen early, sulphate of zinc, followed by draughts of warm water when it begins to act, appears to be the preferable emetic and most appropriate remedy. The quantity which was given varied from a scruple to a drachm, according to the nature or urgency of the case. It has the merit of being less irritant than most other emetics, and of acting also as an astringent, thereby hindering further absorption. I have found that an interval of fifteen or twenty minutes, sometimes longer, intervenes before emesis is produced by it. It should in the first instance be given as little diluted with water as possible. In an emergency, salt and water, or mustard and water may be substituted, and their operation accelerated by irritating the fauces with a feather. When a large quantity has been taken, or a greater interval than an hour has elapsed, the stomach becomes insensible to the action of emetics, and mechanical means for removing the poison should be immediately had recourse to. The necessity for this is still more obvious when the patient cannot or will not swallow. The introduction of a flexible tube into the stomach, attached to the canula of a syringe, was first proposed by Renault in 1803 for the extraction of poisons. The *stomach syringe*, as it was then called, with valves, was, however, invented and first used in this country so recently as 1823. It has since then been the means of saving very numerous lives which would otherwise have been lost. I have occasionally had some difficulty in introducing the tube of the stomach-pump, and keeping it introduced, when required to be done forcibly, in opposition to the struggles of the patient. I have also seen some inconvenience arise from the commencing action of an emetic, which may have been given previously to its introduction. The instrument I use has a stop-cock worked by a flute-key lever, which is much more to be depended on than the older valved variety. It is of some importance that it be kept in good working order; and it is desirable to be assured of this by first using it alone with some tepid water. I frequently, especially in boys, ascertain the proper length as a guide for inserting the tube, by previously measuring with it

externally the distance from the mouth to the epigaster. A point of consequence is to keep the patient awake. This is best accomplished by walking him round the room between two assistants when his strength will permit of this; by the application externally of sinapisms; by shaking, or if necessary pinching him occasionally; and by throwing cold water on his face, or in some cases passing it from a height on the head. I very recently found this last measure prove most effectual in rousing a patient from very deep hysterical insensibility, after the failure of other means. When this is done, from the insensible state of the patient, it is well to guard against subsequent bad consequences by keeping the rest of his person dry, or by a timely change of clothing. Draughts of tea or coffee assist both in rousing and in restoring the subsequent nervous exhaustion of the patient. A selection of the above remedial means should be made according to the stage of poisoning, and the actual state of the patient at the time—emetics at first, the stomach-pump, walking round the room, and cold affusion afterwards. The two last will be inappropriate if the patient is moribund; but the stomach-pump may still be used along with external and internal stimulants, warm coffee or mustard diffused in water being injected with it after any poison still contained in the stomach has been withdrawn.

Cases illustrative of the antagonistic effects of atropine and opium have been recently published by Von Graefe and others, the former having been proposed as an antidote in poisoning by the latter.—*Glasgow Medical Journal, January* 1863, *p.* 381.

130.—ON GOLD DUST AND IRON FILINGS AS AN ANTIDOTE FOR CORROSIVE SUBLIMATE.

By Dr. Christopher Johnson, Baltimore.

In the year 1841 a rejected lover, at that time a visitor in Baltimore, committed suicide by taking a large dose of corrosive chloride of mercury. The case fell into the hands of Dr. Thomas H. Buckler, who employed, unavailingly, all the known antidotes for this destructive agent, and had the misfortune to see his patient die in great agony. The failure of art to relieve made a strong impression upon Dr. Buckler, and he forthwith instituted experiments with the view of ascertaining by observation the efficacy and value of the various articles used or proposed to counteract the poisonous effects of the mercurial salts.

In the course of these experiments upon pigs and dogs, it occurred to him to magnify the *galvanic test* into an antidote—for, said he, if the corrosive chloride in solution, being placed

on a bright gold surface, and touched with an iron point which is also brought in contact with the gold, undergoes decomposition, there is no reason why gold and iron in the form of powder, as exposing great surface, should not also separate chlorine and mercury in combination in the living stomach. Besides, the elements are instantly appropriated by the antidotal agents, "the mercury attaching itself to the negative electrode, namely, the gold, while the chlorine unites with the iron of the positive electrode to form chloride of iron; and thus, for a highly dynamic substance, we substitute a comparatively inert amalgam of gold and a harmless chloride of iron."

Accordingly into the stomach of pigs and dogs he introduced poisonous doses of the corrosive chloride of mercury, taking care to control the œsophagus: and then, after various intervals, he passed an estimated quantity of gold dust and iron filings into the stomach of a portion of the animals. All the poisoned animals which had not received the antidote became the victims of the experiment; and of the others, those only died which had presented very severe symptoms before the administration of the remedy.

These results were published by Dr. Buckler in the Baltimore Medical and Surgical Journal in 1843, with a recommendation, by the author, of the *new antidote* which he proposed. But the suggestion seemed to have received no attention whatever, until, in the last year, a case of corrosive sublimate poisoning occurred to us, in the which we assayed for the first time gold dust and iron filings upon the human subject.

We had had the good fortune to witness a repetition of Dr. Buckler's experiments, and were familiar with his views in respect of the agency at work; so that we only awaited a fitting opportunity for testing the value of our friend's proposition.

On the 14th of May last, a gentleman of this city, being disturbed in mind, procured two drachms (℥ij) of corrosive sublimate from an apothecary, assigning as a reason his intention of destroying rats; mixed two-thirds of the salt with whiskey and water and swallowed the whole at a draught, leaving no dregs in the tumbler. In about ten minutes his wife, hearing efforts at vomiting in her chamber, proceeded thither, and found her husband sitting up in violent and agonizing emesis. A word and the fatal paper satisfied her as to the danger of the sufferer; whereupon she despatched a messenger for medical aid, but administered the while milk and white of egg, having in a previous marriage been the observant wife of a physician.

In five minutes—it so happened—we were at the bedside, and the galvanic antidote being present in our mind, we sent in haste for two drachms of iron by hydrogen, and a book of gold-

leaf. While waiting for the arrival of the articles we encouraged perseverance in the use of albumen and milk, but the patient continued to vomit freely, violently, and unintermittingly. Everything swallowed was rejected as soon as it approached the stomach, and then, after sturdy efforts, small quantities of greenish mucus, streaked with blood, were discharged. The face was much congested, the body cold, and the whole surface bedewed with sweat.

In less than ten minutes (in all somewhat short of twenty-five minutes from the ingestion of the sublimate) we had prepared a bolus by dusting the surface of a leaf of gold with the iron, over this another leaf, then iron, and so on, alternately the two metals until about one-half of the gold-leaf had been expended, and the mass was rolled into a ball.

Before swallowing this, however, we administered warm water to effect the removal of mucus, albumen, and milk, should any of these matters be in the stomach, as they must defend the sublimate from the action of the antidote by preventing contact. Instant emesis followed.

The bolus was readily taken into the stomach, aided by a little water, for the poisoned man regretted his act and wished to escape from death. For five minutes there was a calm, during which we made another bolus with the remainder of the gold-leaf and iron.

Vomiting now recurred, but with less violence, and the matters ejected were tinged with yellow or light brown, and contained particles of gold-leaf.

Presently another moment of quiet occurred, which was the signal for the administration of the second bolus. Vomiting now ceased entirely, although at intervals for an hour a slight tendency towards emesis was observable—but the frantic, tremulous anxiety, had given place to confidence and composure —the man had assumed a hopeful appearance, and we were of opinion that the first—the greatest danger—was past.

On the next day moderately severe ptyalism manifested itself; but the convalescence was rapid, and the cure was complete in about eight days.

The after-treatment, when vomiting was arrested, was very simple, consisting of hydrocyanic acid in mucilage with small doses of morphia; mucilaginous drinks, as of gum arabic, or quince seed, were directed; and beef-tea and arrowroot were the essential articles of diet for some days. Rochelle salt dissolved in soda water was given on the first days, and counter-irritation over the epigastrium practised from the beginning, and continued until all signs of gastric disturbance had disappeared. And, to conclude the statement, the mouth symptoms were met by gargles of tinct. perchloride of iron largely

diluted with water, alum in infusion of sage, and lastly, flax-seed tea acidulated with lemon.

We would not insist upon the superior efficacy of gold-leaf and of iron by hydrogen over gold-dust and fresh iron filings—although in the case reported the virtue of the former was apparent to and acknowledged by all the witnesses—for we have still a preference for the latter, on account of the freshness of the metallic surfaces. But in the hurry of the moment the first mentioned may be easily obtained in a state of preparation excepting on Sundays, and then even a dentist would furnish gold-foil No. 4 or lighter, which would supply the place of gold-leaf. If the conveniences were at hand, or, if we were near a pharmaceutist's, we would prefer to grind gold-foil with fresh iron filings in a mortar, and exhibit the coarse powder so produced with a little water; for the heavier particles would more quickly find their way to the mucous coating of the depending portion, while enough of the finer particles would distribute themselves throughout the stomach to accomplish the destruction of the corrosive chloride not in contact with the mucous membrane.—*American Journal of Med. Sciences, April* 1863, *p.* 339.

131.—ON THE TREATMENT OF SNAKE-BITE.

[The following plan of treatment of snake-bite is abstracted and condensed by Dr. Moriarty, of Limerick, from an article in the 'Warwick Mail,' of Sydney, Australia, by Dr. Berncastle. Dr. M. considers that the same plan will probably be of equal use in cases of bite by rabid dogs.]

The plan of treatment may be stated as follows:—1st. The wound if recent should be well sucked. 2ndly. When possible, ligatures should be applied. 3rdly. The wound and parts around the wound should be excised and freely bathed, so as to encourage the bleeding. 4thly. Caustic or ammonia may be afterwards applied, the selection to depend on the nature of the bite. 5thly. Stimulants (whisky) to be liberally given. 6thly. Half a teaspoonful of strong ammonia, and double this quantity of the tincture of assafœtida to be taken every quarter of an hour in a wine-glassful of water. 7thly. When the bleeding has ceased the wound should be poulticed with ipecacuanha powder. 8thly. If convenient or suitable the actual cautery may be used. 9thly. In order to point out the value of stimulants, we may remark that old Indians in Canada will with impunity suffer themselves to be bitten by a rattlesnake, the most obnoxious of all the ophidia, after drinking a pint of whisky. 10th. The good of all or of any of these remedies will in a great degree depend on their immediate application. These remedies may

be also usefully applied to the dangerous stings or bites of tarantulas, scorpions, centipedes, &c., &c.—*Medical Times and Gazette, July* 11, 1863, *p.* 54.

132.—CASE OF POISONOUS SNAKE-BITE.

By Dr. William Shaw, Windsor, New South Wales.

[The patient had been bitten on the arm by a black snake, one of the most deadly of the Australian species. It was nearly two hours before he was seen by Dr. Shaw.]

Upon my arrival, I found him in a very low condition; his countenance very pale and listless; body bedewed with a cold perspiration; the pulse small, rapid, and fluttering, with great drowsiness and disinclination to speak or to answer questions. A ligature had been applied by a neighbour above the wound shortly after the injury. I seized the bitten part with forceps, and cleanly excised it and around it to the extent in size of a shilling. Pretty free bleeding occurred, which I further encouraged by getting the lad's father to suck the wound with with his mouth. The sucking being continued for about ten minutes, I then applied a strong solution of ammonia to the wound, and at the same time I gave a draught, consisting of two drachms of aromatic spirit of ammonia and the same quantity of tincture of assafœtida in a little water, and this I ordered to be repeated every hour, with strong coffee *ad libitum*. Soon after these measures were adopted, and especially after the administration of the draught, he appeared to revive, and continued to do so well, that in three hours from the time of my visit I considered him completely out of danger.

In the treatment of this case, no originality is claimed, with the exception of the administration of tincture of assafœtida, and for that hint I am indebted to Dr. Francis Campbell, of Torban Creek Lunatic Asylum, N.S.W. Dr. C. appears to look upon the tincture of assafœtida as almost a specific in snake-bites, and certainly the result of cases he adduces which were treated by that medicine would almost warrant one to endorse his opinion. I am inclined to believe, however, that it owes its properties in such cases more to its action as a stimulant, and perhaps also in part to its ill taste and odour, rousing to a certain extent the depressed nervous energy of the sufferers from that species of poison.

Dr. Berncastle, of Sydney, another gentleman who has paid particular attention to snake-bites, considers stimulants the great *forte* in the treatment of such cases; and although he advocates the propriety of local treatment, still he appears to say that it is

of less importance than the administration of large doses of some diffusible stimulant, he giving the preference to whisky.

The rational course of treatment, then, appears to be to get rid of the poison by excision or free scarification of the wounded part, and by propping up the depressed powers of life by diffusible stimulants of any kind till the shock—always an attendant of snake-bites—is recovered from.—*Lancet, Sept.* 5, 1863, *p.* 295.

133.—GALVANISM IN POISONING BY OPIUM.

By Dr. John W. Ogle, London.

[The following case occurred at St. George's Hospital, in 1851.]

The patient, a child, aged seven months, had a quantity of laudanum given to it (it was said that a spoonful had been given, but it could not be accurately made out what sized spoon had been used) at half-past nine a.m. It was brought to St. George's Hospital at twelve o'clock at noon in a comatose condition, with perfectly livid lips, pallid face, almost icy coldness of all the extremities, and very contracted pupils. There was, however, no stertorous breathing. The fontanelles were in a natural state. The child was put into a series of warm baths, and very cold water was repeatedly dashed upon the whole of its naked body. This alternate use of hot water and cold water was continued for some time, with the effect of rousing the child and making it cry, but it very quickly relapsed after each effort into its former condition, until the "douching" was repeated. At times the child would take the breast during this comatose state, but only for a few minutes. After persevering in the use of the hot bath and the cold affusions for above an hour, no decided advantage being apparently gained, but, on the contrary, this mode of treatment losing its power in rousing the patient, it was determined to try the use of galvanism. This was begun and persevered in with most decided benefit. By its means the crying was kept up at intervals, and the general circulation roused from time to time. The good result continued, and the galvanism was persisted in until half-past six o'clock in the evening, when, to the delight of the mother, who had, against the advice of all about, watched with the utmost anxiety the seemingly painful use of the affusion and galvanism, the patient opened its eyes in a languid, but otherwise natural manner, and gradually revived. After taking food, and looking about it for a time, it fell into a deep, but quiet and healthful sleep, in which it long remained. It was fully restored to its ordinary state after a time, and removed home by the mother.

The galvanism was kept up remittingly by relays of medical students, who very promptly lent themselves to the work.

It was observed that galvanism across the cheeks caused most crying and arousing of the child's energies; that along the back most writhing and contortions. When applied across the thorax, from side to side, it appeared that most sobbing with crying was produced, and when along the line of the diaphragm much sobbing, but not crying.

It was noticed, during the comatose condition of the child, that frequently one half of the lips and mouth would become much paler than the remainder, which was very dark and livid, the darkness gradually passing off, like the fading away of a shadow.—*Medical Times and Gazette, Oct.* 3, 1863, *p.* 368.

134.—POISONING BY CYANIDE OF POTASSIUM—DANGERS TO PHOTOGRAPHERS.

Dr. Davanne directs attention to the dangers to which those who are engaged in the art of photography are exposed. They use constantly, he says, two poisons of the most active kind—namely, cyanide of potassium and bichloride of mercury. Their hands are constantly in contact with strong solutions of these poisons; and often, in spite of warnings repeated over and over again, they run absurd risks. The author gives an account of a case in which a gentleman, who had stained his hand with nitrate of silver, endeavoured to removed the stain by rubbing over it cyanide of potassium freely. In the act, he slid under the nail of one of his fingers a small portion of the cyanide salt. At first he did not notice what had happened, but in a little time he felt a sharp pain in the part, followed, after a few minutes, by an intense vertigo, so that all objects appeared to be moving around him. To relieve himself promptly, he conceived the unfortunate idea of employing vinegar; the cyanide was quickly decomposed, and hydrocyanic acid was produced absolutely. The vertigo now increased, accompanied by shiverings, pallor of the face, loss of sight, and great exhaustion. The power of speech was lost, but the intelligence was preserved. The extremities were cold, and as the sight returned there was double vision. The symptoms did not pass away for ten hours.

The treatment adopted consisted of cold and friction on the spinal column, inhalation of ammonia vapour, and the administration of strong infusion of black coffee.—*Canstatt's Jahresb.*

[Dr. B. W. Richardson says:]

We can confirm, to a considerable extent, many of the facts related by Dr. Davanne. A photographer, who was under our care a few months since, after using a solution of cyanide of potassium at a time when his hands were "chapped," was

seized with vertigo, nausea, shivering, great prostration, double vision, and muscular tremor. These symptoms were repeated several times before their cause was discovered. On consulting us, we traced the symptoms distinctly to the local application of the solution of the cyanide. On removal of the cause, the patient lost at once all the acute and immediately dangerous indications; but he was left for some weeks very feeble, anæmic, and dyspeptic, and with the blood abnormally fluid.—*British and Foreign Medico-Chirurgical Review, October* 1863, *p.* 535.

135.—ON NITRATE OF SILVER.

By John Higginbottom, Esq., Nottingham.

I think it very important to call the attention of surgeons to the superiority of the ordinary nitrate of silver over the new preparations which have been now some time in use. The new preparation—"lunar caustic points, perfectly tough"—is worthless as an application in surgical cases. It is not nearly so soluble as the old brittle stick of nitrate of silver, and has scarcely any power in checking and subduing inflammation, and useless in the cure of wounds. The same remarks apply to the cake and crystals of the nitrate of silver used for photographic purposes; which, although they may be more chemically pure, are much less efficacious for surgical purposes than the old preparation.

It is a remedy to which I called the attention of medical practitioners thirty-seven years since in an "Essay on the Use of the Nitrate of Silver." Every succeeding year it has maintained its value in my estimation; but I fear that if the new preparations continue to be used, it will undeservedly fall into discredit.

The grounds upon which I have formed my opinion are these: I have used the new preparations for some time; and in cases where from past experience I looked forward with a certainty to successful results, I have been much disappointed, and the cause was to me then inexplicable. To give a case: A medical friend had a severe puncture. I applied the nitrate of silver with a conviction that he would have no further trouble with it. To my surprise, the application took little or no effect; surrounding inflammation followed, also of the absorbents. Further applications were made with the same nitrate of silver; but the inflammation continued its usual course, keeping my patient several days in bed, and afterwards it very slowly subsided. Another case: A patient had a severe contused wound on the middle finger of the left hand from a fall. The nitrate of silver was well applied. I expected it would heal under an adherent

eschar. That it did not do so surprised and disappointed me. The wound remained some weeks in a painful and inflamed state; and when at last it healed, it left an irritable induration, with swelling. This I treated again and again with the nitrate of silver without much benefit. These and other cases I could relate (one especially, a formidable attack of erysipelas on the leg, which formerly I found yielded to the application, entirely failed) led me to think there must be something wrong in the preparation of the nitrate of silver; and it occurred to me that the new preparation did not produce so much pain as the old did immediately on its application. I procured some of the old-fashioned stick of nitrate of silver. The first application on the case above mentioned did more in removing the irritable, inflamed swelling in four days than all former applications.

From the experience I have had daily of the use of the nitrate of silver for so many years, I am convinced that no remedy of equal power in subduing external inflammation and healing wounds has been discovered, if properly applied, although many remedies have been recommended in lieu of it.

In cases of extensive external inflammation I would use a solution of four scruples of the old-fashioned stick of nitrate of silver to four drachms of distilled water; in common cases of inflammation and wounds, the ordinary stick, as particularly directed in my last work—"Additional Observations on the Use of the Nitrate of Silver."—*Lancet, July* 4, 1863, *p.* 14.

136.—FORMULA FOR A SOLUTION OF BROMINE.

By Dr. J. Lawrence Smith, Professor of Chemistry in the Medical Department of the University of Louisville.

The frequent demand for bromine from the Louisville Chemical Works, which are under my direction, induced me to inquire for what purpose it was used, and I learned that it was being employed as a therapeutic agent, especially in the form of vapour mixed with air as a purifier of the atmosphere of hospitals, where erysipelas, gangrene, small-pox, &c., existed, and also internally in certain affections of the throat. Knowing full well the inconvenience of the use of the substance in the form called for, I at once undertook to compound a solution which would meet the ends required, and be more convenient for any therapeutical use to which uncombined bromine might be applied. From the slight solubility of bromine, any attempts to dissolve it in water would give too dilute and bulky a solution, the natural suggestion, therefore, was to use but little water and facilitate its solubility by adding bromide of potassium; at first the following proportions were used: 1 troy

ounce of bromine, 120 grains bromide of potassium, and 1 fluid-ounce of distilled water; the formula left a small quantity of bromine undissolved, and the solution was too concentrated. After varying the proportions in differents ways I have settled on the following as the most convenient formula:

℞. Bromine, 1 troy ounce; bromide of potassium, 160 grains; distilled water, q. s. to make four fluid-ounces of the whole mixture.

Dissolve the bromide of potassium in about two fluid-ounces of water in an eight ounce bottle, then add the bromine, agitate gently until the solution is complete, then add water enough to bring the whole to four fluid-ounces.

This mixture forms a very dark red solution, evolving strong fumes of bromine, and readily soluble in any additional quantity of water.

I have given this formula as one that will, doubtless, recommend itself to those of the medical profession engaged in using bromine, and it is already being used by the medical profession of this place.—*American Journal of Medical Science, April* 1863, *p.* 385.

137.—ON IODINE AS A DEODORISER AND DISINFECTANT.

By Dr. B. W. Richardson, M.A., London.

[The following is from a report of papers read at the late meeting of the British Association at Newcastle.]

Dr. Richardson made a short observation in sub-Section D on Thursday, August 27, "On the Application of Iodine for Disinfecting and Deodorising Purposes." The iodine should be placed in a common chip-box, such as is employed by pharmaceutists, the lid of the box being replaced by a covering of "leno," or the iodine may be placed in the ornamental vases on the mantle-shelf of a room. The smell of iodine could thus be communicated to the air of an apartment, and air so purified was not only fresh and agreeable to the sense of smell, but any organic matters present in it were destroyed. In extreme cases the iodine should be placed on a dish or plate, and the heat of a candle being applied beneath, the iodine was volatilised, and a room was quickly purified. Dr. Richardson said that in cases of small-pox a knowledge of the facts he had named was most valuable. In rooms occupied by sufferers from this painful disease, organic matters floated largely in the air, rendering the air most offensive. He (Dr. Richardson) had succeeded, in all cases, in rendering such air inodorous by the volatilisation of iodine. He had also observed

the singular fact, that when the air was greatly charged with organic materials, the smell of the iodine was for a long time imperceptible, so that in truth the iodine method of purification was also a ready and practical test of the purity of an air. Dr. Richardson thought the iodine plan was quite as effective as the liberation of free ozone,—it was, indeed, in principle the same, and was so simple that every person could employ it.

Dr. Wood said that the iodine produced the effects named by Dr. Richardson in one of two ways,—it either destroyed the organic compounds by combining with hydrogen, and forming hydriodic acid, or it might be that in the chemical changes that occurred ozone was formed. In either case there was unquestionably a rapid and effective process of oxidation, the results being the same as occurred with chlorine to a considerable extent, and in a manner more easy and manageable.—*Medical Times and Gazette, Sept.* 26, 1863, *p.* 334.

138.—ON THE USE OF COLLODION WITH GLYCERINE IN ERYSIPELAS.

The substitution of a glycerinated collodion for the common collodion will completely prevent the cracking of the skin and other unpleasant consequences which often occur when the latter is used as a dressing in erysipelas of the face.

The manner in which it should be prepared, according to Dr. W. Abbotts Smith's recent small work, 'On Glycerine, and its Uses in Medicine, Surgery, and Pharmacy,' p. 30, is by adding two parts of glycerine to one hundred parts of common collodion. The addition of this small proportion of glycerine is sufficient to impart considerable suppleness to the collodion, and to prevent its dragging upon and cracking the delicate tissues to which it is applied.

[Equal parts of collodion and castor oil are recommended by another writer.]—*Lancet, October* 31, 1863, *p.* 527.

139.—"RED VULCANITE" IN DENTISTRY.

By Dr. Edward Wells, Reading.

(Read before the Reading Pathological Society.)

Rev. Mr. C. being, as he considered, in perfect health, went about six weeks back to a dentist in London, who fitted him with a frame containing upper and lower teeth. Immediately upon wearing them, he found a metallic taste in his mouth, which was very disagreeable. By degrees his health began to fail; he became weak and nervous, lost his appetite, and began

to emaciate; had flatulency, fœtid breath, and looseness of bowels.

After wearing the teeth for six weeks, he became convinced that they were the cause of his ailments; that he was, in fact, being slowly poisoned.

This led him to send for me. I found him suffering from nervous prostration. Pulse 100, weak; tongue coated with a white film; the urine was whey-like, having an extremely fœtid odour, faintly acid; specific gravity 1009, slightly albuminous on boiling.

On examining the teeth, which are exhibited, the basis is found to be what is termed "red vulcanite," a composition, as I learn, of vermilion, sulphur, and india-rubber, vulcanised. This composition, therefore, contains the red sulphuret of mercury, probably to some amount, as the colour is entirely due to that salt.

Now, as the "red vulcanite" is largely used in dentistry, it is possible that it may not so rapidly affect many persons as it did my patient; for Mr. C. is peculiarly sensitive to the action of mercury. When ill, he is never able to take the least mercurial medicine without experiencing its toxic effects. This is probably due to his being predisposed to an affection of the kidneys. He was therefore peculiarly susceptible of the poisonous effects of the vermilion contained in the basin; and, from the condition of the urine, I think there is no doubt he was suffering from the injurious impression made by the mercury on the urinary organs. It is not improbable that there may have already existed some disease of the kidney *in a latent form*, which has been called into action by the absorption of the mineral. Such an explanation of his symptoms, however, would not render the use of such a basis—in his case, at least, as well as many others—a whit the less objectionable.

In the short time that has elapsed since leaving off the teeth, he has become gradually better and stronger. The urine is much less fœtid; the appetite has improved; and the tongue is cleaner. The improvement has been sufficient to leave him still fully convinced that the teeth were the cause of his illness. —*British Medical Journal*, *September* 5, 1863, *p.* 266.

140.—THE ACTUAL CAUTERY.

M. Nelaton proposes and practises a new method of cauterisation, using a fine jet of flame, produced by the combustion of ordinary gas, for the purpose. The actual cautery, we are told, is replaced by this small flame, which is projected from a thread-like tube, is about fifteen *millimètres* long and two or three in

diameter, and may be handled as readily as a pen or a stick of lunar caustic. The actual cautery rapidly cools down, is larger than required, and creates much vapour and smoke when applied, and so conceals from view what is going on, and moreover is a formidable and horrid looking affair. The flame, on the contrary, burns calmly and equally, and may be applied exactly where it is wanted. No hemorrhage follows the flame, the coagulation taking place in the deep vessels of the part. The deep effect of the flame is remarkable. A minute application tion to muscle will carbonise it to the depth of half a *centimètre*, and disorganise as much more of the tissue beneath. Bones are rapidly destroyed; in two or three minutes the two layers, the compact tissue, and the diploë of the tibia, were reduced to an earthy mass. An open artery attacked by the flame is folded up on itself. In this way, according to M. Nélaton, we can produce in a very short time, and with the simplest apparatus, over which we have complete control, much greater effects than can be produced by the most powerful cauteries of classic surgery, not even excepting those resulting from the use of the electric battery. An elastic bag containing the gas is employed, which bag is subjected to moderate pressure.—*British Medical Journal, August* 29, 1863, *p.* 246.

141.—TARTAR EMETIC PLAISTER.

M. Mialhe gives the following formula for a plaister, which produces a much more manageable eruption than that in ordinary use:—White pitch, 40; black resin, 20; yellow-wax, 20; turpentine, 5; olive oil, 5, and tartar emetic, 10 parts. To be mixed into a plaister mass, and spread, while hot, on strips of calico, like ordinary strapping. This revulsive is of great use in chronic bronchitis and phthisis.—*Med. Times and Gazette, July* 11, 1863, *p.* 50.

142.—SOME OBSERVATIONS ON THE IODIC TEST FOR MORPHIA.

By A. Dupre, Ph.D., F.C.S.

Having frequently observed that students failed to obtain the blue iodide of starch by the action of iodic acid on morphia, even when using quantities of the alkaloid much more considerable than are generally alleged to yield the result, I have been induced to examine into the circumstances most favorable for the successful application of this test.

The iodic acid used in the following experiments was prepared by dissolving one part of the crystallized acid in fifteen parts of water. When less strong, the solution does not react readily

with dilute solutions of morphia; while, if much more concentrated, it interferes with the delicacy of the reaction, iodic acid having to a certain extent the property of decolorising the blue iodide of starch. The starch solution was made by boiling five grains of starch in 2000 grains of water. It should always be freshly prepared. As starch does not show the blue colour in presence of an excess of iodine, but then only assumes a dirty green, care should be taken to add a sufficient quantity of it when working with strong solutions of morphia; on the other hand a great excess of starch destroys the colour, which should be remembered when working with very dilute solutions or very small quantities of morphia.

Morphia or its salts in the solid state.—Morphia, or any of its salts, when moistened with iodic acid, instantly assumes a brown colour, and the smell of iodine is developed; the addition of starch produces the blue iodide of starch. Quantities as low as $\frac{1}{200}$th of a grain gives this reaction readily; smaller quantities do not give the reaction satisfactorily in this manner; and if less than $\frac{1}{500}$th grain be taken, the reaction becomes altogether uncertain; it is somewhat more delicate if the starch be added before the iodic acid. The test may, however, be made much more delicate in the following manner. A drop of starch should be added to the morphia, and the whole carefully evaporated to dryness. The dry residue left, after cooling, should be moistened with iodic acid, when it will assume a dark-blue colour, which is still well marked, even though not more than $\frac{1}{10000}$th grain of morphia be present.

Solutions of morphia.—The more concentrated solutions were, of course, made with salts of morphia; they should be neutral, and any excess of hydrochloric acid should be especially avoided, since this is decomposed by the iodic acid with liberation of chlorine, which entirely prevents the formation of the blue iodide of starch. A solution of morphia, or of any of its salts, has also the property of decolorising the blue starch compound, or of preventing its formation. In strong solutions of the alkaloid care must be taken on this account to add a sufficient amount of iodic acid, avoiding at the same time any very great excess.

Solutions of morphia, when mixed with iodic acid, acquire a yellow tint, the depth of which and the time in which it appears depend on the strength of the two solutions. When they are concentrated, the colour appears immediately, and is of a deep reddish-yellow; when diluted, some time elapses before its production, and it is then a yellow tint. This yellow coloration is still perceptible if the solution contains no more than 1 part of morphia to 20,000 parts of water. The point at which the colour

of a liquid ceases to be visible of course depends on the quantity of fluid used, as also somewhat on the shape of the vessel in which it is contained; the above statement refers to quantities of twenty or thirty grains of liquid put into ordinary narrow test-tubes. Starch added to this yellow mixture produces the well-known blue colour, if the morphia be not dissolved in more than from 400 to 600 parts of water; in more dilute solutions the test becomes uncertain, though it often succeeds if only $\frac{1}{800}$th or $\frac{1}{1000}$th part of morphia be present. Below this proportion the liquid, although still strongly yellow, fails entirely to answer to the test; thus showing either that the coloration is not due to liberated iodine, or that the morphia and iodic acid possess a considerable preventive power as regards the action of iodine on starch, although they may not enter into any definite combination with it. Ordinary reducing agents, even when so diluted that the yellow colour due to the liberated iodine is no longer perceptible, still give a strong blue on addition of starch, provided no great excess of iodic acid has been used.

In 1861 Lefort recommended the addition of ammonia, instead of starch, to the mixture of morphia and iodic acid. The colour is thereby considerably deepened, and rendered a dark brown in strong, a light brown changing to pink in dilute, solutions. The yellow colour produced by most other agents reducing the iodic acid is entirely discharged by ammonia, and thus are removed many of the objections that may be urged against the iodic acid test, as hitherto employed. This test is also far more delicate when applied to solutions than the starch test above described, as it will render the coloration visible in solutions containing no more than $\frac{1}{30000}$th part of morphia. A process will, however, presently be given by which the starch test is rendered almost equally delicate. In applying this test, the iodic acid must be added first, and in dilute solutions the mixture should be allowed to stand for about ten minutes before the ammonia is put in, as otherwise the coloration may be entirely prevented. Lefort recommends to moisten strips of unsized paper repeatedly with the morphia solution, carefully drying them each time, and then to apply the test to the paper thus prepared.

It has been stated above that starch fails to give the blue reaction with solutions of morphia containing less than $\frac{1}{800}$th part. It may, however, be readily made to do so in even much more diluted solutions, by the careful addition of ammonia, taking care to avoid the slightest excess. In very dilute solutions it is not easy to add the proper amount of ammonia, and it is therefore better to proceed in the following manner. After the mixture of morphia, iodic acid, and starch, has been allowed to stand for ten minutes, a very dilute solution of ammonia is

carefully poured upon the top of it, which may be easily done by means of a small pipette. After a longer or shorter time, according to the strength of the morphia solution, two coloured rings make their appearance at the place where the two layers are in contact. The lower one, in the acid layer is blue; the upper one, in the ammonia, is brown. The rings are usually in contact, and may be clearly perceived in solutions containing not more than the $\frac{1}{20000}$th part of morphia. The brown ring alone may be seen in still more dilute solutions. If the two layers are finally mixed, the whole assumes the brown or pink colour of Lefort's test. If the morphia solution is very diluted, not more than one drop each of solutions of starch and of iodic acid should be added to about twenty drops of the suspected liquid.

Delicacy of the reaction.—When the test is applied to the dry morphia, $\frac{1}{10000}$th of a grain will give the reaction. When applied to solutions, the test is not nearly so delicate, and $\frac{1}{1000}$th of a grain may be put down as the smallest quantity that will give the reaction satisfactorily.

Objections.—As the objections to the iodic acid and starch test, as usually employed, are given in all books on poisons, it is unnecessary here to allude to them. As regards the ammonia test, morphia seems to be the only substance that gives rise to this reaction. Several precautions are, nevertheless, necessary, either when using ammonia alone, like Lefort, or when using the starch and ammonia in the manner described in this paper. Extremely dilute solutions of a sulphite, sulphocyanide, or other substance reducing the iodic acid, will also give rise to the blue ring; but neither is the brown ring present nor will the whole assume a brown colour on mixing the two layers. Solutions of aniline, when mixed with iodic acid, assume a violet colour, which, on addition of ammonia, is changed to brown. In very dilute solutions this might be mistaken for the reaction of morphia. No iodine is, however, liberated, and starch consequently fails to give any reaction. In moderately strong solutions the deep-violet colour produced is in itself sufficient to guard against any mistake. If dilute solutions of aniline are mixed with iodic acid and starch, and then covered with a layer of ammonia, as above described in testing for morphia, a brown ring is produced in the ammonia. The absence, however, of the blue ring, and the slight pink colour of the lower layer, render the reaction sufficiently distinct from that of morphia. It will be seen, from the above, that a mixture of aniline with some other reducing agent would give very similar reactions with iodic acid as does morphia; although the aniline, to a considerable extent, neutralises the effect of the reducing agent,

y reabsorbing the liberated iodine. The test should therefore e employed only after means have been used to obtain the orphia in a tolerable state of purity.

The iodic acid cannot be replaced in these reactions by a mixture an iodate with sulphuric acid, since this gives rise to colour actions with a number of other alkaloids.—*Guy's Hospital eports*, 1863, *p.* 323.

143.—AN INQUIRY INTO THE ACTION AND USES OF ATROPIA.

y Dr. Alexander Fleming, Physician to the Queen's Hospital, and Consulting Physician to the Midland Eye and Ear Hospital, Birmingham.

Physiological Action.—Local Action.—When a solution of ropia, 1 grain of the alkaloid to 10 drachms of the menstruum, the same strength as that which I employ for internal use, t made without spirit, is well rubbed into the skin, no change sults in the sense of touch,—the sensibility to common im- ressions, or to temperature. The colour of the part is not tered, nor is its contractility—as evidenced by the goose-skin oduced by the galvano-magnetic current and wire brush of uchenne—either increased or impaired. I have determined ese points by repeated experiments. Further, from several ials which I have made on worms and the small intestines of bbits, I conclude that atropia is not a local paralyzer, as has en commonly inferred, either from its supposed mode of action . the iris, or from its curative influence in spasmodic diseases. ne alkaloid appeared rather to quicken the contraction of the rts to which it was applied.

Painted on the mucous membrane of the mouth and throat, dries the part, and—chiefly as secondary effects—impairs th its feeling and movement, perverting the taste, and causing ich difficulty of swallowing. These symptoms are much lieved by moistening the parts with water.

Applied directly to the smaller arteries, atropia constricts em (Jones); and this effect may continue for many hours.

On the Eyeball—The same solution of atropia, dropped on the njunctiva, in a few minutes widens the pupil, and after a ich longer interval impairs the sight and lustre of the eye to ich it is applied. The eye is misty, and cannot read print, sily seen by its healthy fellow. This has been generally ferred to diminished sensibility of the retina; but my observa- ns (made in 1856) prove beyond doubt that it is altogether e to the width of the pupil, and the loss of power in the eye adapt itself to near vision. That it is in part due to the

large pupil admitting too many and too divergent rays is shown by the vision being improved in a dusky light, and in looking through a hole—smaller than the dilated pupil—in a black card held close to the eye. But it is especially due to the inability of the eye to adjust itself to near vision. The defective sight is more marked the closer the object, and diminishes with distance. As the influence of the atropia is wearing off, while yet the difference between the two eyes is decided with a near object, scarcely any difference is perceived with a distant one. The type of a book appears smaller to the atropised eye than to its fellow at the same distance. Hence vision with both eyes conjointly is confused, and, for reading, the dilated eye must be covered.

The solution of strength indicated above (1 grain to 10 drachms) serves well for ordinary use to dilate the pupil. To obtain the deeper effects upon the eye a stronger solution of 3 grains to 10 drachms should be employed. This reduces the iris to a mere line, and completely impairs the sight. The blindness continues from one to four days, and subsides some time before the pupil regains its normal size. The eye thus atropised bears the sun's rays better than its fellow, which seems to show that the iris itself is, in part at least, the seat of the incident impressions which contract the pupil and protect the retina. When this stronger solution is applied carefully to the outer side of the eye, the adjoining or outer part of the circle of the iris dilates some time before that of the inner side. This fact points to a strictly local action. Atropia does not redden the conjunctiva. It has no action on the iris of the dead eye.

Among other observations which I have made on the atropised eye, I found that in adapting the telescope to it the instrument requires to be lengthened, as compared with the other eye; but the focus having been adjusted, vision is perfectly clear, although the eye, without the help of the telescope, be absolutely blind. Indeed, several of those who made trials with the telescope maintained that they saw better with the atropised eye—a fact deserving of the astronomer's attention. In using the microscope with the atropised eye, the object has to be removed a little farther from the instrument; but the focus having been adjusted, vision is as good as with the healthy eye.

I was able to make the smaller image of the atropised eye, as compared with the other, very manifest by means of the reflecting stereoscope.

The atropised eye is altered as if for distant vision. The pupil dilates, and at the same time I believe that the lens recedes and diminishes the distance between it and the retina

The following is my explanation of the mode in which these results are produced.

The erectile structure of the iris has been of late too much overlooked in discussing its movements—the singular softness of which appears to imply something more than muscular contraction.

The iris may be congested and the pupil contracted by relaxation of its arteries letting more blood into it, or by compression of its veins impeding the flow from it; and it may be emptied of blood and relaxed, either by contraction of its arteries or by relaxation of its veins, or both conditions may co-operate. The ciliary processes have a mixed erectile and muscular structure, not unlike that of the iris, and it is a most feasible supposition that the lens is advanced by their turgescence, conjoined with contraction of the ciliary muscle, and recedes on their relaxation—the former being an active, and the latter the quiescent condition of the parts.

The sympathetic nerve supplies at the same time contractile power to the arteries and to the radiating fibres of the iris; and it seems most probable that in ordinary dilatation of the pupil the same reflex influence stimulates conjointly the contractile arteries entering the iris and the radiating fibres. These being always associated in action, we can understand that an agent like atropia, directly contracting the arteries entering the iris, will draw into movement by sympathy its radiating fibres, the contraction of which is already made easy by the emptiness of the erectile tissue.

For near vision in normal accommodation I believe that the *pupil contracts and the lens advances.* The veins of the iris and ciliary body are, I believe—as formerly suggested by Wallace, Cooper, and Smee—at the same time compressed by the ciliary muscle causing turgescence of their erectile parts. The turgescence of the iris co-operates with the contraction of its circular fibres to close the pupil. The turgescence of the ciliary body must exert pressure on the vitreous humour, which, diffused equally through that fluid, takes effect on the only yielding point—the lens—and pushes it forward, just as a patient is raised by pressure on the side of a water bed. The ciliary and radial muscles concerned in these associate movements receive their nervous supply from the same source or third pair.

When atropia is applied to the eye I believe that it reaches, *first*, by imbibition, the arteries entering the iris—constricts them—impedes the flow of blood to, and relaxes its tissue. The constriction of the arteries of the iris, with its consequent relaxation, draws into action, *by functional sympathy* (and without the intervention, by reflex action of the brain or cord), the radiating fibres, and dilates the pupil. Sinking deeper into the

eye, the alkaloid reaches, *secondly*, the ciliary processes, and relaxes their erectile structure and causes distant vision. The relaxation of the ciliary body must cause the advance and expansion of the vitreous humour around the lens ; while the lens itself recedes, to occupy the place of the displaced fluid. The ciliary muscle is considered by some anatomists to have both circular and radial fibres, like the iris, and animated, in like manner, by the third and sympathetic nerves.

That the lens recedes and approaches the retina in the atropised eye, is proved by the vision being clearer with distant than with near objects, and by its furnishing a smaller image than the healthy eye of an object at the same distance of both.

According to the view here stated, the normal accommodation of the eye to near and distant vision depends essentially on a change in the position of the lens, brought about in the manner described. The experiments of Cramer and Helmholtz, on the other hand, refer this power to a change in the form of the lens. Near vision is effected, according to them, by an increase in the thickness or convexity, and distant vision by a flattening of the lens. This body certainly does not look as if it could be made thick and thin by muscular action ; and as it must be most difficult to make the measurements of its antero-posterior diameter in the living eye, on which this opinion is founded, I would desire to see them verified by others. I say this with sincere respect for these most able oculists. Assuming their observations, however, to be absolutely correct, the change in the form of the lens may be only one part of the phenomena of even normal accommodation ; and certainly it is quite compatible with my theory of the mode of action of atropia, in widening the pupil and causing distant vision,—for it must not be forgotten that my explanation applies to both of these changes.

In the dead body, Helmholtz found that the lens has the form—thick and convex—of that adjusted for near sight, which is curious, seeing that near vision is the active state in the living eye.

The remarkable precision of the phenomena produced by atropia in the eye, and the comparatively gradual manner in which they are accomplished, are more easily reconciled with my explanation ; and without attaching too much importance to them, some facts in practical medicine which harmonize with it, may now be stated. For many years, I have noted that patients suffering from atonic and exhausting disease, and especially from such as enfeebles in a marked manner vital turgescence and erectile power, as enteric fever, diabetes, anæmia, Bright's disease, and diphtheria, are disposed to wide pupil and distant vision. There is also good reason to believe

that contracted arteries, wide pupil, and far sight or virtual blindness, are the *early* phenomena in the eye of the epileptic paroxysm, of fainting, of excessive loss of blood, and of pure sedative poisoning. Again, those conditions which check the arterial flow to the eye tend to dilate the pupil, such as aneurism in the chest and neck impeding the passage of blood into and through the carotid, a tumour pressing on, or a plug in the vessel. Worms and disease of the belly in children dilate the pupil and impair the sight, probably by reflex action through the sympathetic nerve—exciting the radial fibres of the iris and contracting the cerebral arteries. Hence, also, in all likelihood, the train of anæmic head-symptoms so characteristic of tape-worm.

On the other hand, those conditions which favour arterial plethora or venous congestion of the head tend to contract the pupil—such as dilatation and loss of contractility of the aorta and carotid—giving passage to a larger stream, and checking its force less, than the normal vessel. Aneurism of the innominata closing the subclavian and leaving the carotid free will increase the force of the blood current in the latter, and this will be further augmented if the carotid be diseased, dilated, inelastic, and non-contractile.—*Edinburgh Medical Journal, March* 1863, *p.* 777.

144.—ON THE THERAPEUTIC PROPERTIES OF CARBOLIC ACID.

By Crace Calvert, Ph.D., F.R.S., Manchester.

Carbolic acid, hydrated oxide of phenyle, or phenic acid, is a white substance, which crystallizes in long prisms, fusible at 93° Fahr., and boiling at 370°. It has a slight tarry and aromatic smell, resembling that of wood creosote, and is freely soluble in alcohol, ether, and glycerine, partially so in glacial acetic acid, and only slightly so in water, of which 100 parts will dissolve only three parts of carbolic acid. It is easily prepared by treating the oils of tar, which distil between 350° and 400°, with caustic lye, removing the caustic lye solution from the neutral oils, and adding hydrochloric acid to the alkaline solution, when the carbolic acid is liberated, and rises to the surface as an oily fluid, from which, by distillation, the above-mentioned therapeutic agent is obtained.

[The following are extracts from a paper read before the Lancashire and Cheshire Branch of the British Medical Association, by Mr. Turner, of Manchester.]

"In cases of relaxation of the mucous surfaces, the solution of carbolic acid in glycerine, applied by means of a brush or

sponge, is most beneficial. Thus its use is indicated in polypi of the nostrils, as well as ozæna, and in all putrid discharges from the mouth, throat, nostrils, ears, rectum, and vagina.

"I shall next call your attention to the use of carbolic acid in *diphtheria*, in which disease it is a most valuable remedy used topically to the throat. . . . . To apply it I use a sponge mop, which should be used freely, but not saturated, lest a drop should fall into the larynx. The escharotic effect of carbolic acid is confined to the surface to which it is applied, there being no spreading to the contiguous parts, which may happen in the case of nitric acid. The aqueous solution of carbolic acid may be also used as a gargle.

"*Ulcers.*—I apply carbolic acid in different degrees of solution, according to the character of the sore, to carbuncle and ill-conditioned sores.

"*Fistulæ.*—I apply it by means of a wax taper used in lighting gas, or, if the size of the fistula will admit of it, I use a cat-gut or wax bougie, taking care to carry it to the bottom of the fistula. I have never succeeded in anal fistula where there is a communication with the gut. In these cases an operation is still necessary.

"*Hæmorrhoids.*—The action of carbolic acid is mainly to corrugate, and therefore to obliterate, the sac of the pile. It coagulates the contents, which may be squeezed out; and by corrugation it empties the pile, by which the two surfaces are brought into contact, and thus the sac is obliterated."

Mr. Turner also, in a private note to me, speaks of the use of carbolic acid to fetid ulcers in the following terms:—"It may be advantageously used, as a solution of one part of acid in forty parts of water, in fetid ill-conditioned ulcers. It alters the action of the blood-vessels, causing a purulent instead of a sanious discharge, and destroys almost immediately the offensive smell of the secretion. In ulcers having a communication with carious bone, or even necrosis (where the bone is dead), it has, in its diluted state, a good effect when injected into the sinuses leading to the diseased bones. Where there is mere caries or ulceration of the bone, it effects the healing process, and in necrosis it promotes the exfoliation of the dead portion. In gangrenous and all offensive sores, it removes all disagreeable smell and putrescency, and may render the discharge innocuous to the contiguous living and unaffected tissues. In its diluted state, therefore, it is a great boon to patients labouring under that class of disease."

When Mr. Turner wishes to employ carbolic acid in a less diluted state than the aqueous solution, and yet not in its full strength as a caustic, he prefers the following solution. He

mixes two drachms of pure carbolic acid in one drachm of liquor potassæ and half a pint of water.

It is with pleasure that I am able to add that Mr. Oscar Clayton and Mr. Campbell De Morgan have informed me of several successful applications which they have made of carbolic acid, confirming many of the results of Mr. Turner's, above described.

Dr. Pattison, of St. John's-wood, writes to me as follows :—

"I have prescribed your carbolic acid in several cases of fungoid disease during the last nine months with marked success. In three cases of fungus hæmatodes in which I employed it, the disease in all was checked in a remarkable manner. A thick crust was speedily formed on the ulcerated and bleeding surfaces, the exhausting discharges were completely arrested, and in one case there was great diminution in the size of the fungous mass. Your carbolic acid is almost a specific in cases of anthrax."—*Lancet, Sept.* 26, 1863, *p.* 362.

145.—ON SEA-SICKNESS.

By Dr. John Alston.

[On studying closely the phenomena of sea-sickness, it is readily observed that the earliest noticeable symptoms pertain to the brain. The person feels uneasy, a something indefinable, but soon a sensation of giddiness or swimming in the head comes on.]

He perceives the sensation as if he were lifting off his feet, which increases so much that he feels he must sit down, or grasp some object, to prevent him from falling. He has now headache of a most intense nature; and about this period, or even at its earliest commencement, the nausea and vomiting set in, which is so soon to become such a painful symptom, and to obscure all the others by its prominence. But in many cases, where the voyage is very short, or where the weather is fine, the disease never passes beyond the giddiness and severe headache, with loss of appetite, which during the voyage are as persistent to the individual affected, as are the more marked and further advanced symptoms in those who are less fortunate in remaining at this stage of the disease. In others, the head symptoms are for a time swamped in the nausea, &c., but are never absent, and on the nausea disappearing, they become once more prominent. If a person has recovered from a first attack of the disease, sometimes it never again, in that individual, passes beyond the stage of headache; whilst, in others, the headache is the sure prelude to the next

attack, and is even much more prominent in its character than the vomiting. I have observed, in many cases of this form of headache, much intolerance of light, and a symptom which seldom fails to be absent where the faculty is perfect, namely, an increased perception of smell. The secretion of saliva is increased; this secretion is an exception to all the others. I have thus again grouped the symptoms, and especially those peculiar to the onset of the disease, as in my opinion they are best adapted to give us the clue to its true nature, of which the later symptoms are but secondary signs, which only obscure the former.

From a careful comparison of these symptoms, and from continued observation, I have come to the conclusion that the "*fons et origo mali*," has its centre in the head, and that the gastric symptoms are but the result of that sympathetic relation, so well known as existing between the great nervous centres and the stomach, through means of the pneumogastric and other links. It will be asked, does any lesion exist, and what is the nature of the changes induced? That some change is produced by the motion of the ship is hardly to be doubted. What that change may be is a matter for argument, and one requiring great consideration. It may be some organic lesion that is temporarily created, but against this it will be urged that no organic changes are known to exist, and when the disease has vanished, no bad results, as far as we know, exist to prove that any serious change has occurred. It may be functional derangement of the brain mass, produced by a constant succession of slight shocks to which the nervous centres are subjected, which in some cases, as instanced in steam-ships, is aggravated by the vibration of the machinery. That that is the true nature of the disease, I am inclined to believe. The facts of the case, and strong analogy, I think, also tend to confirm this view. It will be urged, that calling this a functional disease of the nervous system is only another mode of begging the question, and does not explain to us in any other way than formerly the nature of the affection. But in reply to this I would say, that although I have chosen what is rather an anomalous expression in medical science to express the nature of the disease, still I am by no means prepared to admit that I will, by so doing, render the subject more obscure than I found it. But I have so named it, because I could find no other expression so suitable to explain the effects of the disease. That a marked change is produced on the functions of the nervous system can hardly be denied, as, even when perfectly recovered at sea it requires a long time to acquire the ability to study; the mind seems sluggish, and when an effort is made, and some amount of concentration of the mind has been accomplished, how often, with feelings of regret,

must the subject be given up on account of the intense headache which is the result. That the disease is accompanied by some organic derangement I feel certain, and I am prepared to prove by analogy that the symptoms are those peculiar to shock. Thus, when an individual sustains a violent or sudden jerk of the body, he feels a disagreeable sensation in his head, and sometimes nausea, if the jerk be very sharp; or, if the person be very nervous, you have faintness and nausea with vomiting produced, in addition to the headache. Such symptoms are also produced by a blow or a fall on the head; and patients who have fallen from some distance and lighted on their feet have experienced the same, and yet no one thinks of referring them to the stomach: they are at once, and with much propriety, referred to the head. But it is not to be supposed that the symptoms we have described as peculiar to sea-sickness are in reality so; for, if we consider it as produced in the manner I have above described, it will be at once recognized as the same affection which we frequently observe in the case of the common garden-swing, where symptoms are produced, and an affection for the time set up that I defy any individual to diagnose as a different disease from that we have been describing. Nor is this the only example. Railway travelling produces like results in many; horse-riding or carriage-driving in others; and, in the new world, even sleigh-riding has been known to give rise to this disease. And, of these analogous cases, I am prepared to prove that the symptoms are similar to those of sea-sickness, and the cause unusual motion, with the certain fact that the sure and certain cure for all is an immediate and total cessation of all motion. Many will be inclined to ask what the effects are on the brain, or on the nervous centres, which causes the secondary symptoms? Are they permanent and do they include any organic derangement of the nervous centres? This question I am not absolutely in a position to answer positively; but I think, from the symptoms already alluded to, that there is a temporary derangement of the action of the nervous centres produced, and that this remains often for some time after the disease is gone, is evinced by the fact that, after the patient is landed, and seemingly recovered, he feels for many days the sensation of heaving, and this is present when the body is found to be completely at rest. That the disease, in some instances of great severity, and in those individuals who are very susceptible to it, is capable of producing serious organic results I do not for a moment doubt. To be brief, and sum up the opinion I have here given, I would define sea-sickness to be a disease caused by the effect of motion of an unusual character on the great nervous centres, which, for a time, or at certain times, as the individual is exposed to the exciting cause, so affects these centres as to hinder them from operating in that efficient manner

in the economy, which is known to be their wont in a state of health.—*Glasgow Medical Journal, Jan.* 1863, *p.* 446.

146.—ON AN IMPROVED MODE OF USING REFRIGERATION AS AN ANÆSTHETIC AND AS A REMEDY.

By Dr. James Arnott.

Congelation has hitherto been generally produced by placing the freezing materials on the part to be benumbed. In order to ensure success, care must be taken that the ice shall be well pulverised and rapidly mixed with the salt or salts constituting the frigorific. The mixture must be applied by means of gauze, or some other thin permeable material; and when the part is not in a horizontal position, a gutta-percha cup fitted to it may be required to keep the frigorific in contact with the skin. Now, all this trouble may generally be avoided by the adoption of an expedient similar to that employed in the therapeutical application of extreme heat. It is rarely the case that a burning substance is applied directly to the part; instead of this, an iron, which has been previously heated in the fire, is used. In a similar way, an iron, or a brass, or copper implement, of appropriate shape, may be previously cooled in a freezing mixture, and applied with the greatest accuracy to any accessible part in whatever position this may be. A small, flat, laundry iron, which may be used for pounding the ice, will also answer in a great many cases as the refrigerator. If an extensive or continued refrigeration is required, two such irons, immersed in a semi-fluid mixture of two or three pounds of ice and salt, may be necessary to replace each other, just as two hot irons are often required for cauterization.

When a metallic body of this description has been cooled to below zero of Fahr., it will often arrest the circulation of the skin the instant it touches it; but more frequently it must be moved and gently pressed on the part for a few seconds, so as to bring a continuous fresh surface in contact with it while the blood-vessels are compressed.

Another expedient, partly resembling that just described, and partly that hitherto in use, consists of a thin metallic bottle (tinned iron or aluminium) completely filled with the frigorific mixture. A Florence flask will sometimes answer the same purpose.

It is not, however, in being a safe anæsthetic that the principal value of congelation consists. I am anxious to see it more generally employed as a prompt and certain antiphlogistic in all accessible inflammations. The extraordinary remedial powers of congelation in the various forms of chronic rheumatism, which I have related in former publications, may be attributed

partly to its anæsthetic and direct antiphlogistic virtues, and partly to the peculiar counter-irritation which it excites. As promptness of action is eminently characteristic of this remedy, it would be especially serviceable in many of those inflammatory and painful diseases to which soldiers and sailors are liable, and which are at present cured with so much difficulty as to render them long unfit for their duties. Amongst these may be reckoned sprains and inflammatory affections of the joints, wounds, irritable ulcers, headache, lumbago, and other painful affections, inflammation of various glands, ophthalmia, erysipelas, and other diseases of the skin.

Being convinced, from no little experience, that a short application of intense cold produced by a frigorific mixture of appropriate strength, constitutes a certain and speedy remedy of every accessible inflammation, as well as a means of preventing pain in operations, without the risk of sudden or (which has been much more frequent) consecutive death attending the use of chloroform. I do not deem that portion of my time misspent which has been employed in devising and describing such a simple and easy mode of making this application as may lead to its more general adoption.—*Medical Times and Gazette, June* 6, 1863, *p.* 583.

147.—THE RELATIONS OF HEIGHT AND WEIGHT IN THE HUMAN BODY.

In the Statistical Society's Journal, of March last, a very interesting table is given, showing the growth of the human body from 18 up to 30 years of age, indicated by weight and height.

The averages were taken from upwards of 4,800 observations at all ages. Thus a lad of 18, if he be 5ft. 4in. in height, speaking in round numbers, ought also to weigh somewhere about 8st. 10lbs. Given the age of 21, and the height 5ft. 5in. he should weigh 9st. 5lbs. Ascending still further, and assuming the age to be 25, and the height 5ft. 6in., the weight would be 10st. 5lbs.; and at thirty years of age, with a height of 5ft. 6in., we ought to have the result 10st. 1lb. In fact so clear and demonstrable is this "law of increase in the growth of man," as determined by very extensive measurements taken at different times by scientific gentlemen, that we can almost work, as it were, in a rule of three sum, any one condition we like. Taking the converse of what we have already exhibited, we may say that if a lad of 19 weighs 9st. 4lbs., he ought to measure in height 5ft. 4in. and a little more; if at 22, 9st. 12lbs., he should be 5ft. 6in. in height, and so on.—*British Med. Journal, April* 25, 1863, *p.* 438.

148.—ON THE UNFAVOURABLE INFLUENCE OF SUDDEN CHANGE OF CLIMATE.

By Dr. J. Henry Bennet, Physician Accoucheur to the Royal Free Hospital.

[The attention of the profession has not previously been drawn to the unfavourable influence exercised upon health by the sudden change from a northern to a southern climate.]

In October invalids leave England's moist atmosphere, when the weather is already getting cold, and the evenings and mornings are foggy. The express train is often taken at Paris for Marseilles, and in sixteen to twenty hours the dry sunshiny Mediterranean region is reached. There it is still summer; the sun is powerful; the temperature high, usually above 70° Fahr. The liver and skin, which were already in England relieved from the stimulus of our mild summer heat, are called violently and suddenly into action. The result is diarrhœa, bilious attacks more or less severe, skin irritation, urticaria, boils, &c. Diarrhœa is so common that few northerners escape; and it is universally, and erroneously I believe, attributed to change of food, to wine, and to such influences.

These attacks are most severe with those who hurry their departure from England, push rapidly to their destination, and reach the south in September or early in October. In my opinion the last week of October is quite early enough for invalids, or even healthy northerners, to arrive in the south of Europe. The cool weather of autumn does not begin until about the second week in November; and a month or six weeks of hot, oppressive southern weather, with a liberal allowance of mosquitoes, is generally damaging to the health of "north country people." The worst cases of bilious derangement that I have to attend each autumn are amongst such.

By the end of April or early days of May the sheltered Riviera undercliff begins to be disagreeably warm. Moreover, fine midsummer weather has been enjoyed so long that it becomes difficult to believe that winter still reigns in the north. The invalids are tired, also, of their six months' absence from home, and their hearts are set on the return. Once the homeward journey has commenced it is generally rapidly carried on, and many arrive in Paris or in England early in May, much too soon for their own good. In the north of Europe, if the wind is from the south, in April and May the air is mild and balmy, and vegetation makes rapid strides; but until the mountain lands of Norway and Sweden are freed, or partly so, from their canopy of snow, which does not take place until June, a north-east wind brings cold, chilly weather, and night frosts. It is

this cold, chilly atmosphere, an atmosphere, too, more or less loaded with moisture, that often meets the invalid on his return home. The skin and liver, previously in full operation, are checked suddenly if the journey has been a rapid one, extra work is thrown on the lungs and kidneys, and very often severe attacks of influenza, of coryza, of bronchitis, of hæmoptysis, are the result.

I have pointed out the evil: I must now point out the remedy. It is to ignore the facilities afforded by express trains, and to make both the southern and the northern journeys in such a manner as to become acclimatized to the great changes.

Serious invalids who intend to winter in the south of Europe, are better out of England the last week in September, or early in October; but, as we have seen, their winter residence is scarcely fit for them before the end of October. The two, three, or four intervening weeks should be spent on the road. A quiet, leisurely progress southward allows the human economy to gradually accustom itself to the change of climate. A favourite station with me is Fontainbleau, thirty miles south of Paris. The climate is continental, drier than that of England, the hotels are good, and the forest scenery is very interesting and beautiful. A week or ten days may be spent there both pleasantly and profitably for health, much more so than in Paris.

Further south we have Valence, Aix Nimes, Arles, &c. I would, however, more especially recommend a small watering-place, which I may nearly lay claim to have discovered, as far as my countrymen are concerned. It is Gréoulx, a five hours' picturesque drive from Aix-en-Provence. Gréoulx is merely a village, with a large comfortable hotel, in its own grounds, erected over a hot sulphur spring, one of the most powerful and longest known thermal waters of the south of France. Its celebrity, however, is all but entirely confined to that part of France. I myself found it out by the map, whilst trying to discover an autumn and spring intermediary station. I visited it last May, and was much pleased with the scenery from Aix, with the hotel and its grounds, and with the very lovely district in which it is situated. There are two wild mountain rivers—the Durance and one of its tributaries—within a mile of the house, and fishing, and shooting, are provided for the inmates, with all the resources of French social country life. The hotel makes up some 200 beds. Gréoulx is quite out of the beaten track, far away from railways, amongst the hills of Provence, and a residence there must have many charms. I sent a little colony of my Mentone friends and patients there this spring, and they were all delighted with it. There is an intelligent resident French physician, Dr. Jaubert. I do not think a

pleasanter place could be found to spend a fortnight in on the way south.

The same course can be followed by invalids on their return north. The departure from Mentone, Nice, Cannes, or from Italy or Spain, can take place at the end of April, or on the first day of May; and a leisurely journey may be made towards the north, so as to reach England by the end of May or the first day of June. Gréoulx is open on the 1st of May, and is even thus early very lovely; the deciduous trees in full leaf, and the nightingale in full song. A fortnight at Gréoulx, a week at Fontainbleau, and May is pleasantly consumed, and England and its climate reached by slow stages, which neutralize the risks attendant upon the "cannon-ball" style of travelling. —*Lancet, Aug.* 22, 1863, *p.* 218.

149.—ON THE ACTION OF MEDICINES.

By Dr. David Nelson, Professor of Clinical Medicine, Queen's College, Birmingham.

[Speaking of the heterologous class of medicinal agents, Dr. Nelson shows that they act either as direct neutralisers, as excitors or adjuvants of morbid action, or as specifics. He then observes.]

From the fact that all remedial agents which enter the body have to deal with living tissues under innumerable variations of condition, and react within it according to peculiar vital laws, it happens that even the simplest homologous elements may act in diverse manners, according to the constitutions and idiosyncrasies of the individual subjects; and much more so those that are composite and heterologous. Beers, wines, spirits, and spices, and even albumen, starch, and oil, will behave very differently in different bodies, according to constitution and condition, as every one of delicate stomach is so well able to testify; how much more so those matters that are more foreign to the system.

1. Amongst the class of *neutralisers*, the antacids and antiseptics are almost the only agents that act in an invariable manner; and may, therefore, be passed over without comment beyond an observation or two in regard to the permanganates. While fully alive to the admirable antiseptic virtues of cinchona and the mineral acids, as well as some of the chlorides, I yet think there are conditions in which the internal and external use of the permanganate of potassa affords results far transcending those of any other agent. While bark and the mineral acids are more potent for good in the blood-putrescence of fever, carbuncular disease, blood-scurvy, and pulmonic gangrene, I

believe the permanganates to be incalculably more efficacious when the surfaces are involved; as in cancers, and foul ulcers of the skin, and putrid states of the mucous membranes of the mouth, nose, throat, stomach, and intestines, and vagina and uterus. While the chlorides, creasote, and carbolic acid, &c., displace one bad odour, they themselves bring others scarcely, to some persons, less offensive; but the permanganate simply deodorises and freshens. The only odour perceptible is that pleasing impression which arises from the smell of recently bleached clean linen. Theoretically speaking, we have here a simple hyperoxygenation and dispersion of the offending elements by the powers of ozone; but, be the precise nature of the action what it may, the practical results cannot be doubted; for they are invariable and instantaneous; so that, against the putrefactive horrors of cancer, mercurial salivation, necrosis, and certain affections of the liver, intestines, and uterus, no agent can approach the freshening influence of the permanganate of potassa, a preparation as beautiful in appearance and as mild in taste, as it is certain and beneficial in its action.

The other classes of the heterologous remedies vary in their effects, and not alone from differences in themselves, but from differences in the constitutions of the patients. Thus, the power of bearing cordials or spices varies very much according to the state of the mucous membrane. Alcohol takes very different effects upon different individuals. While one person of compact, powerful brain, and rigid fibre, will only be moderately stimulated or slightly elated; another, of inactive and lax, full habit, will be rendered sleepy and even stupified by a much less quantity. With the first there will merely be an increase of the animal heat; with the second, there shall be congestive engorgement of the brain, liver, and lungs, &c., the heart palpitating, the respiration impeded, and the face highly flushed.

Under the bodily depression of disease, or the mental sadness of adverse affairs, much of this stimulant may be borne without any other effects than simply keeping the patient at par with others; while the plethoric and sanguine subject will become elevated by a moderate allowance. We also know what large quantities of sulphuric acid may be taken under scurvy, and of nitrate of potassa under fibrinous rheumatism, before they produce their counteractive effects. With regard to sedatives, how very little will often compose to sleep the full-fed, easy, unreflecting subject; and, on the other hand, what large doses may be administered under acute pain and high excitement, without any further result than the induction of a light sleep, or the mere soothing and lulling of intense agony. In the strong and rigid, these alone may occur; but in the lax and

pale, how often have we symptoms of faintness and oppression which the patient can only compare to a sense as of the approach of death. All who hear me are of course familiar with the action of opium and other agents of that kind upon certain individuals, and how dangerous is heavy sleep in such diseases as bronchitis, pneumonia, and cardiac obstruction, where nature for her own safety demands watchfulness. In the aconite we have also a good illustration of the respective tolerance of a remedy by one patient or another. In the deep-seated pains of bones, and other more solid tissues, and also of the cranium and larger joints, but more especially in sciatica and amaurosis, all who have used it aright must confess to the wonderful relief afforded in respect to the leading symptom of intolerable and exhausting pain; at the same time, there are patients of a constitution that cannot well bear it, and whose hearts become so fluttering and feeble under its influence as to cause very great anxiety. It is fortunate, however, that potent diffusive stimulants have an excellent counteractive effect in such cases; and I always take care to administer such in combination with the aconite, whenever I do use it upon such subjects. The same observation is applicable to so depressant and relaxant an agent as antimony. Here we have a powerful and direct sedative, a calmer of the heart's action, a correcter of febrile heat, an expectorant and diaphoretic; yet ever requiring to have its action modified or restrained according to various circumstances. Here the utility of judicious combination becomes vividly apparent; and experience has to speak of the beneficial mutual control exercised between this remedy and others of a different, or even opposite nature when allied together. Thus is observed the subdued pulsation of the cranial vessels, the gentle warm perspiration, and the subsidence of headache, stupor, or delirium, when the antimony is united with opium, as in fever. A similarly modified action is to be observed when pneumonia occurs in feeble constitutions, and when one desires to calm the heart's action, and open the pores of the skin without inducing nausea, or that sinking sense of weakness so apt to prove fatal in such cases. Combined with cinchona and ammonia, this result is obtained from it; and, though it might be urged by the sceptic, and those of the dry chemical school, that the ammonia, or the astringent principle of the bark, would decompose the soluble tartrate of antimony, and so render it inert, such, I feel certain, is not the case; and it will be observed that, while the antimony is so far chemically changed as to prevent its immediate nauseating effect upon the stomach, it yet acts in its usual sedative and diaphoretic manner, and, in fact, finds its way to the recesses of the system quite as surely, and more steadily, than in its more simple and soluble form. The fact is further

proved by the beneficial action of the antimonial powder; and it is well known that the continued use of antimony will kill its victim, even though never used except in effervescing draughts, the alkali of which would as certainly decompose the tartrate as either ammonia or bark. Other remedies of an opposite mode of action may also, as we know, be combined with advantage; as digitalis with ammonia or with arsenic, or quinine and opium with lytta, &c.

2. In the class of *excitors* or *adjuvants of morbid action*, we have an illustration of that one kind of medical procedure on which is founded the absurd dogma of "like cures like," with as a limited truth, contained within the narrow compass of this one occasional line of treatment; but which, by a visionary ect, has been attempted to be set up as a universal principle n therapeutics, in the same manner as other purblind and enthusiastic panaceists have attempted to set up water, cod oil, electricity, and hot air. Each of these things have their uses, as ve know, within certain bounds, and all rational physicians have so employed them; but the laudation of any one of them as a panacea, is simply an absurdity that can only be professed by rapacious rogues, and credited by the foolish and ignorant in natters medical. The sole ground-work of the phrase "like ures like" is evidently, then, this partial medical truth, and ts natural operation in what one may call primary reaction, r that effort by which the constitution endeavours of itself to ast forth, as speedily as possible, whatever hurtful agent may have entered the system. Such primary and spontaneous reaction may assume the shape of vomiting, or purging, or weating, or extraordinary micturition, or the explosion of ruptions, or boils upon the surface, or all combined, or in uccession. Under such circumstances, we may certainly ncrease the reactionary symptoms with great benefit to the atient; especially if the efforts at expulsion be somewhat ineffectual. If the vomiting arise from offensive matters in the tomach, our readiest cure clearly consists in an emetic; if the urging proceed from a similar cause in the intestines, our eliance is in a brisk purgative; if the reaction be towards weating, expectoration, or diuresis, we promote the flow of the respective excretions, and, if there be a tendency to cutaneous ruptions, or boils, we may give tonics, and thereby apparently ncrease the disorder by forcing out all latent morbid matters. So far all is consistent with experience and common sense; but what would be said of him who, acting under the ordinary dry rule of *similia similibus curantur*, should exhibit an emetic during the vomitings of cerebral disease or pregnancy; a purgative in ulceration of the bowels; a sudorific in the sweatings of phthisis, or a diuretic in diabetes? The question had better

not be answered; for the answer would be a very rough one, in keeping with the roughness of such practice.

Amongst the excitors of morbid action, mercury must occupy a conspicuous place, when it is used to the extent of salivation. In this wise, we see in it a wonderful neutraliser of the syphilitic virus, and a promoter of that series of changes in the body which is equivalent to a distinct disease in itself, but yet acting curatively towards other diseases of the most formidable character. By some mysterious means, it invades the vitality of certain morbid growths, attenuates and dissolves the fibrinous material in the blood and elsewhere; so abating inflammations, softening and reducing hard swellings, and, in fact, disintegrating the tissues generally, if carried sufficiently far; but yet in this manner controlling deep seated action, and guiding to a safe issue the most dangerous internal disorders of the brain, heart, lungs, liver, intestines, serous surfaces, and last, not least, of the eye.

3. Turning our attention to the *alteratives*, we find amongst them innumerable illustrations of the fact that agents may work with the greatest efficacy, and yet their modes of operation remain utterly unknown. We must include amongst them the antispasmodics, the tonics, the febrifuges, and other specifics. In some of them we have but to admire the happy results, without having the remotest idea of how these have been produced. In others, we have some glimmering notion of the secondary means by which such results have been attained. For example, how strychnia excites or how conium paralyses the powers of the spinal system; how castor or valerian calms that wild nervous excitement which distinguishes emotional hysteria —we know nothing. How arsenic or quinine arrests ague or fever, we are equally ignorant. How calumba, gentian, and other such bitters, give tone to the stomach; and how bismuth assuages ordinary gastralgia—we know not. Neither can we explain how lobelia controls spasmodic asthma, or digitalis lessens palpitation. On the other hand, we do indulge in some reasonable suppositions with regard to a few of such remedies. For instance, when we employ steel and emmenagogues in the in the case of the female epileptic, who is also afflicted with deficiency of menstruation, and meet with a double success in bringing on the monthly discharge and arresting the epilepsy, we are entitled to believe in the uterine source of the more alarming disease, and the rational means of its subjugation by the removal of the primary existing cause. So when we use purgatives with the constipated, and pepsine with the dyspeptic, and find the fits abate, we are equally entitled to hold the gastro-enteric irritation as the main cause. Also when we employ silver, and find that a worm is expelled while the epilepsy disappears, we feel further convinced that the worm was the cause

f the fits, by reflex action upon the nervous centres; and that he silver acted indirectly upon the epilepsy as an anthelmintic, n like manner as the steel and ergot, and the purgatives and epsine, acted as deobstruents and solvents. Of course, as such erangements of the uterine and gastro-enteric functions may ccur in thousands of instances without inducing an epilepsy, e must conclude that there exists in the exceptional cases an ileptic diathesis, that is, an occult something *plus* the ordinary nditions; and it is here, when the disease is apart from any nown organic disease of the brain or other structure, and when, far as we know, it is purely, as we call it, functional, but pable of being moderated or removed by remedies, that such medies receive, more emphatically, the name of alteratives. mongst these stand foremost zinc, copper, arsenic, and quinine how operating we do not know, beyond this, that they seem, their so-called tonic powers, to constringe the capillaries, and lessen that congestion of the brain and nervous system which apt to deprive these tissues of their natural quiet vigour and stained tonicity. Under their influence, the white of the es shows less of that dull, dirty, reddish brown or thick-set nous network, so characteristic of the epileptic aspect; the nd becomes less hazy and confused; the muscles are not so mulous; the hands can grasp objects more firmly; and the t are moved upon the ground with more precision and sticity. Yet sometimes one of these agents will act more neficially in certain cases, and another in others, without y possibility of our knowing why. Again, combinations will en effect what each remedy separately has been unable to ac- nplish. This is again and again illustrated in obstinate chro- diseases of the skin and other such textures. Mercurials. lides, and arsenic may each be used in succession and in reasing doses for a length of time, with little or no effect; l yet the iodide of arsenic and mercury, as represented by novan's solution, administered outwardly and inwardly, may edily induce a favourable change, too marked and too often nessed to admit of any doubt as to the cause.

So also with those remedies used in ulceration of the external face—a subject of profound interest to the physician as well the surgeon, as exhibiting under our eyes the processes erosion or of healing, according as the reparative powers strong or weak. We can tolerably well understand how, an old standing indolent lesion of the surface, besides the ployment of tonics and nutrients internally, we should also certain applications superficially. We can easily see, by *ná facie* reasoning, the utility of such agents as simple llients, sedatives, deodorisers, antacids, absorbents, stimu- s, and astringents. We can discern the directly beneficial

action of the protective qualities of poultices, cerates, and oils, as imitating the scab of nature; we witness the skin-like support of firm bandaging or strapping; we can appreciate the cleansing and cooling effects of pure water; we can see the use of carbon in absorbing irritative gases; of chalk in neutralising acrid exudations; of lytta in stimulating the circulation in sluggish sores; of opium in subduing undue sensibility; of the salts of iron, copper, zinc, or lead, in constringing the lax vessels, and firming the flabby granulations of old and deep excavations; of nitric acid and nitrate of silver in breaking down the brawny indurations which abut upon the softer textures and prevent any approach of the gaping sides of the sore;—all this, I say, we can tolerably well understand upon the general principles of physiology and therapeutics; but why, after we have used all these agencies in vain, a little sprinkling of calomel or of the red or black oxide or bichloride of mercury, or the internal use of iodide of potassium, should induce healthy cicatrisation as if by miracle, is to us a mystery. It is well enough, as is often the case, to say that such ulcerations, &c., must have been of a specific character; and that, even though syphilis could not be proved in the person so affected, yet his parents or grandparents or great-grandparents must have had it. Be it so, or let us suppose so; yet the mystery of the action remains the same as ever. It is a bare truth, a simple and inexplicable fact, which, as no rationalist can explain, so no sceptic can doubt.

Before concluding, I would also wish to speak briefly regarding the variable action of different anthelmintics, whether owing to the different constitutions of the patients, or the different constitutions of the worms, I am unable to declare. But this is certain, that one has sometimes used the kousso with perfect success, and at other times with no result at all; while the oil of male-fern has dislodged the parasite at once. In cases were both kousso and fern oil have failed, the oxide or the nitrate of silver has proved efficacious, the worm having been expelled after the first dose of the one or the other. These, however, are not to be relied upon in all cases; and now that the powers of each have been subjected in one's practice to repeated separate trials, I usually prefer using them in succession, beginning with the silver, and following that up with the fern oil or kousso, as required. The oxide of silver with calomel I have repeatedly found useful for young children. One little girl some time ago was brought to me on account of attacks of epilepsy, and was ordered two grains of the oxide of silver, with three grains of calomel, every other night for a week. A large tænia was passed after the first dose, and no fits have occurred since. I ordered the same for a young

ad ; and, after each dose for three times, there came a round orm, each of the three being ten inches long. These are but xamples of a great many more. A lady who delayed taking, on ccount of its offensive flavour, what was ultimately successful n her case—namely, the fern oil—adventured at first rather upon ne kousso. After drinking the infusion, she proceeded to chew nd swallow the roughly powdered plant for an hour or so ; and t a solemn manner, such as her son-in-law could only compare o a cow chewing her cud. She did stop short, however, and it as not successful ; but the remainder being given to an old oman of the village noted for having a tapeworm which lmost daily came away piecemeal, the entire parasite was ischarged ; though she had previously taken turpentine, gin nd jalap, and other popular remedies, without that result.

Colchicum affords us another instance, when timely employed gainst the primary urinary indications, of a valuable and ertain specific, not merely in ordinary articular gout and heumatism, but in the various nervous, muscular, and osseous ains, and in the bronchitis, gastralgia, pleuralgia, and asthma : that peculiar diathesis. Some have attributed its virtues to ss modification of the renal, and others to its alteration of the epatic secretions ; the latter even asserting that no good hange occurs till purging takes place. Having used it carefully nd extensively, I would emphatically deny the accuracy of this st quoted assertion. The benefit can be gained without urging, or indeed any other bodily disturbance whatever ; but ever, so far as I have observed, without having first effected a lution of the urinary deposits, or a conversion of the ritative insoluble urates into urea. Act in whatever manner may, however (though I believe it acts both on kidneys and ver), we use it for its usually happy results ; and, having certained these by giving it at one time and withholding it another, and noticing the different results, our knowledge of ch results does not at all prevent us from combining it with her agents, but rather enables us to do so the more effectually. aking rheumatism as the aptest illustration of one's proce- ure, we would ally the colchicum with mercurials and saline erients in acute inflammatory cases ; with hyoscyamus, or ium, or aconite, &c., where severe pain prevailed ; with driodate or nitrate of potassa, or both, where fibrinous posits or swellings occurred ; and with soda, or rather tassa, in all. Complicated cases might demand a still greater riety of combinations of these and also other adjuncts, cording to symptoms ; as bleeding, or leeching, or antimony, r the plethoric ; and bark, cardamoms, and ammonia, for the ed and enfeebled.

Such I conceive to be the rational employment of specifics in

conjunction with general remedies; the first operating upon the essence of the disease, and the others on its concomitant symptoms; and, so believing, I can see no inconsistency in a sound combination of the so-called empiric, or rather experimental, and the rational systems of medicine. Indeed, they must be so combined, to enable our composite science and art to assume the character of a real philosophy.—*British Medical Journal, June* 13, 1863, *p.* 617.

150.—ON THE NATURAL HISTORY AND TREATMENT OF HIP-JOINT DISEASE.

By Richard Barwell, Esq., Assistant Surgeon to the Charing Cross Hospital.

[In a previous paper Mr. Barwell treats of the nature of the disease in the hip-joint, in the present he speaks only of the effects of such disease, *i.e.*, the deformities produced, and of the methods of overcoming them. The morbid conditions with which we have to do, are contraction of muscles, and fibrous adhesion of the femur to the pelvis.]

These causes of deformity may be overcome by sudden stretching under chloroform, and by gradual extension, alone or conjoined, and both may be combined with subcutaneous myotomy. Now it is of the greatest importance to the welfare of the patient and to your own reputation, that in each case the best means should be taken to attain the end in view. Sudden action is the best method of overcoming any considerable amount of false anchylosis, particularly if the tissues be extensive and old; also, though it aids to a certain degree in subduing a contracture, yet our main reliance against this condition must be gradual extension. The more I have seen of these cases so have I gradually more and more laid aside myotomy. I am sure that in non-dislocated cases it is but seldom needed, and then only one or two muscles should be cut. It is desirable that all scars of the skin should be loosened previous to sudden rupture of the adhesions. This may often be effected by mere manipulation, frequently repeated; if they will not yield to this means, they may first be divided subcutaneously, and then, while the occluded wound is healing, they must be moved in all directions to render the hypodermic new tissue as loose as possible. I have, in my work, 'On Diseases of Joints,' endorsed an opinion of Mr. Brodhurst's, that the necessary muscles should be divided some days before the sudden rupture. Subsequent experience has taught me to change that view entirely. If sudden rupture be needed at all, the limb is too

stiff for us to render the muscles tense, and thus to discover if they really require division; and should the surgeon set to work to divide those muscles which he thinks may need such treatment, he will most certainly often perform that operation very unnecessarily. On the other hand, if, while straightening a limb, the surgeon should find it compulsory to divide tendons, he should be careful to introduce the knife at points of the skin which will not be rendered tense during his ultimate procedures, and if at the time he carefully exclude air, he need not fear the threatened ill consequences.

[In a subsequent part of the article, Mr. Barwell describes the "sort of knack" by which tough adhesions are to be overcome; for this is not to be done by violence and rough force.]

Mere strength may be employed in vain against tough materials which a skilful twist, a *Kuntsgriff*, as the Germans have it, will immediately overcome. The thigh should be bent up till a decided point of resistance is reached; against that obstacle the limb is to be pressed, not violently, for a minute or two; then a sudden springy jerk in the direction of flexion is to be given. If the sound of rupture follow, the movement is to be continued by pressing the limb back; if the adhesions do not give way, the jerk is to be repeated in slightly different directions as rapidly as possible. The condition and peculiarities of the joint, and the sensation communicated to his hand, must supply the surgeon with minor but still important manœuvres.—*Lancet, Nov.* 21, 1863, *p.* 585.

151.—ON THE IMPORTANCE OF TAPPING THE JOINTS AND BURSÆ MUCOSÆ.

Professor Inzani, of Parma, asserts the perfect harmlessness of puncturing a distended joint, even during the progress of acute inflammation. The fear of bad consequences following from the wound of the tendinous structures is a mere imagination of the ancients; nor does the air ever appear to make its entrance. The puncture may be made with a trocar or a lancet; the latter is preferable for superficial joints. The author has operated very frequently on the knee, several times on the elbow, occasionally on the carpus and ankle, and once only on the hip; no bad consequences ever followed. Pressure by means of a starched bandage should be made, and when the synovial sac refills it should be again punctured before the distention has advanced too far. In this way a radical cure may be obtained. Examples are given in which large joints, principally the knee, were opened for effusions of blood, of serum in acute inflammation, of serum in chronic inflammation, and of pus—usually

with a successful result. But paracentesis should be avoided where the skin is much thinned and ulceration seems impending. In the synovial bursæ paracentesis has given equally good results. The examples which are given are those of effusion in the sheaths of tendons after accident (as the peronæi in sprains of the foot, the extensors of the thumb in falls on the hand), in which a puncture will give exit to synovial fluid mixed with blood, with much relief to the pain and abbreviation of the course of the disease. The author believes that by these punctures chronic synovitis may often be arrested in cases which, treated by ordinary methods, would end in "white swelling," and that in dropsy of the joint the treatment by repeated puncture and pressure is as effectual and more safe than by injections.—*British Med. Journal, Nov.* 21, 1863, *p.* 551.

152.—THE OPERATION FOR THE RADICAL CURE OF HERNIA.

Case under the care of J. Wood, Esq., at King's College Hospital.

A. F., aged twenty-five, a constable in the Irish constabulary, admitted into Victoria ward for a right oblique inguinal rupture of three years' standing, descending into the scrotum, and hitherto retained with difficulty by the trusses he had worn, under which it was constantly slipping down into the scrotum.

October 17th, 1863.—To-day, Mr. Wood operated upon the patient, in the presence of Professor Pirrie, of Aberdeen, and numerous other visitors. Mr. Wood performed, on this occasion, the operation by wire, which he has used in all his later cases in adults with much success. As now performed by him, the proceeding seems to have been much simplified, and is effected with great freedom, ease, and celerity.

The first step consists in an oblique incision, one inch long, into the scrotum, over the fundus of the rupture, with a small, narrow-bladed knife. The fascia of the part is then separated from the skin for the space of an inch round the edges of the incision by turning the knife flatwise under the skin. The denuded fascia is then invaginated upon the index-finger into the hernial canal as far as the internal ring. The edge of the conjoined tendon of the internal oblique and transversalis muscles is then carefully felt for, and raised upon the finger towards the surface. A stout, strong needle, mounted in a handle, is then passed along the finger, and pushed through the conjoined tendon and the inner pillar of the superficial ring. When its point is seen to raise the skin of the groin, the latter is drawn inwards by an assistant to its utmost extent, and the

p[illegible] of the needle is then pushed through it. The bent end of a piece of stout copper wire, silvered (two feet long) is then hooked on to the eye of the instrument, and drawn with quick movement through the groin and scrotal incision. The needle is then disengaged; the finger again introduced into the canal, and placed behind Poupart's ligament, just below the internal ring. The needle is again passed to the outer side of the finger, and, guided by its point, is made to traverse the middle of the ligament while raised upon the finger. The skin is then drawn outwards until the point of the needle can be made to pass through the groin puncture before made. The opposite end of the wire being then hooked on, is drawn back with the needle into the scrotal incision, leaving the middle of the wire as a loop issuing from the groin puncture. The sac of the rupture opposite the scrotal incision is then pinched up between the finger and thumb, and raised from the spermatic cord, which slips away from the pressure. The needle is then passed across the sac, entering at one end of the incision, and emerging at the other. The inner end of the wire is again hooked on, and drawn through or behind the sac close upon the spermatic cord. The two ends are then twisted down into the scrotal incision. Traction is next made upon the upper loop of wire, and by this means the fundus of the sac and its scrotal coverings under the skin are invaginated into the canal as high as the deep ring. The loop is then twisted firmly down into the groin puncture, holding the invaginated parts firmly in their new position. Lastly, the wire loop is bent down to meet the lower ends of the wire, which are bent upwards and fastened to it by a hook cut off at a convenient length. A stout pad of lint is placed under the wire arch thus formed, and a spica bandage placed firmly over all.

On this occasion Mr. Wood showed two patients on whom he had operated a year and ten months and fourteen months before respectively. The first was a muscular adult male, in whom the rupture was direct and scrotal, and one of the largest he had ever operated on, trusses being quite inefficient. Since the operation he had been subjected to very heavy work as a market-garden porter. When examined to-day in the operating theatre, the rings were found quite closed, and no impulse could be felt or seen on coughing violently; in fact, the condition of the side operated on was better and more resisting than the other. The second case was that of a little child aged one year and a half at the time of the operation, and one of the youngest patients he had operated on. The rupture was large, scrotal, and congenital, and no truss had been found to retain it. The operation was performed by the use of the rectangular pins. On being tested in the theatre, no impulse whatever could be

detected in this case. The truss had not been worn for some time previously.

In his clinical remarks, Mr. Wood observed that he had now operated in more than eighty cases, of which more than two-thirds had turned out so far complete cures. Several more had been improved by the proceeding so much that the use of trusses was rendered easier and more effective. These had been generally very large and unmanageable cases occurring in adults at a late period of life. The symptoms following the operations as he now performed them—viz., with wire on adults, and with the rectangular pins on boys and children—were so mild as to be scarcely worth recording. The wire or pins were kept in from ten to fourteen days, the patients seldom staying longer than a month in the hospital. From time to time he had shown cases in the hospital which had been operated on from two to five years previously, and remained quite cured after leaving off the truss altogether. Mr. Wood also called attention to the peculiar kind of truss which he recommended to be worn both before and for some time after the operation. That for oblique inguinal rupture was provided with a boxwood pad of a horse-shoe shape, which pressed upon the pillars of the superficial ring without forcing the integuments into the inguinal canal, and thus dilating it. That for direct hernia was in the shape of an ovoid ring, which had the same but a more direct effect. In particular cases these truss-pads were provided with springs to regulate the direction of the pressure independently of the side springs. These trusses were perfectly comfortable and easy to wear, and had in some instances produced remarkable effects in closing up the hernial canal.

Nov. 5th. To-day the wires were withdrawn, in the case above first described, without difficulty. The patient has been perfectly well, and the wound has discharged so little as to require dressing only a few times. A large amount of consolidation is felt in the inguinal canal, producing a slight amount of swelling of the testicle. The patient enjoys very good health and spirits.—*Lancet, Nov.* 21, 1863, *p* 590.

153.—PHYSIOLOGICAL PROPERTIES OF NITROBENZOLE AND ANILINE.

By Dr. Letheby.

Dr. Letheby observes that, until recently, there has been a common belief among the unlearned that a skilful poisoner could so apportion the dose and combinations of certain subtle agents that he could destroy the life of his victim with certainty, and at the same time measure his allotted moments with the

cest precision, and defy the utmost skill of the physician and
e chemist.

Modern toxicologists have long since discarded these notions,
and have set them down to the vague fears and exaggerated
fancies of the ancients. But an account of the physiological
properties of nitrobenzole shows that there is one substance, at
least, which realises to a great extent the extraordinary opinions
of the ancients. This compound may be given to-day, and yet,
if the dose be not too large, it shall not manifest its action until
to-morrow or the day after, and shall then destroy life by a
lingering illness, which shall not only defy the skill of the
physician, but shall also baffle the researches of the medical
jurist.

In every manufactory where nitrobenzole and aniline are
prepared on a large scale, the peculiar narcotic effects of these
poisons are often observed. The vapours escaping into the
atmosphere are breathed by the workmen, and cause distressing
headache and a heavy sleepy sensation. For the most part
these effects are not serious, but are quickly relieved by fresh
air and a mild stimulant, as a glass of brandy-and-water. Now
and then, however, the workmen, from carelessness in their
habits, expose themselves to the action of comparatively large
quantities of these poisons, and then the effects are most
dangerous. Two fatal cases of poisoning by nitrobenzole have
been referred to Dr. Letheby by the coroner for investigation
during the last two years, and in both instances they were the
the results of careless manipulation. The effects were nearly
the same in both cases, notwithstanding that in one the poison
was inhaled, and in the other it was swallowed. For some
time there was no feeling of discomfort beyond that of
drowsiness; gradually, however, the face became flushed, the
expression stupid, and the gait unsteady—the sufferers had the
appearance of persons who had been drinking. Little by little
this stupor increased, until it passed into profound coma, and
in this condition they died. The progress of each case was
much the same as that of slow intoxication, excepting that the
mind was perfectly clear until the coming on of the fatal coma.
This was sudden, like a fit of apoplexy; and from that moment
there was no return of consciousness or of bodily power; the
sufferer lay as if in a deep sleep, and died without a struggle.
The duration of each case was nearly the same time; about four
hours elapsed from the time of taking or inhaling the poison to
the setting in of the coma, and the coma lasted for about five
hours.

After death there was no appearances of convulsions, but
rather of narcotism and apoplexy. The face was flushed; the
lips were livid; the superficial vessels of the body, especially

about the throat and arms, were gorged with blood; the dependent parts were turgid; the blood was everywhere black and fluid; the lungs were somewhat congested; the cavities of the heart were full; the liver was of a purple colour, and the gall-bladder distended with bile; the brain and its membranes were turgid, and in the case of the man there was much bloody serosity in the ventricles. Analysis discovered the existence of nitrobenzole in the brain and stomach, and also of aniline.

These effects were so remarkable, that Dr. Letheby determined to examine them still further by experiments on domestic animals. Two classes of effects were clearly observed; there was either the rapid coma which characterised the operation of the poison on the human subject, or there was a slow setting in of paralysis and coma, after a long period of inaction.

The general conclusions which appear to Dr. Letheby to be warranted by his investigations are :—

1. Nitrobenzole and aniline in its free state are powerful narcotic poisons. 2. They exert but little action, as local irritants, on the stomach and bowels. 3. Although the effects may be quick, and the fatal termination of them rapid, yet nitrobenzole may remain in the system for a long time without manifesting its action. 4. The salts of aniline are not nearly so poisonous as the free alkali. 5. In rapid cases of fatal poisoning both the poisons are readily discovered in the dead body. 6. In slow cases the poisons may be entirely changed or eliminated, and therefore not recognisable. 7. Both of the poisons appear to be changed in the body by processes of oxidation and reduction, nitrobenzole being changed into aniline, and aniline and its salts into mauve or magenta.—*British Medical Journal, November* 21, 1863, *p.* 550.

154.—ANTIDOTES FOR STRYCHNIA.

Professor R. Bellini, after conducting a long series of experiments on poisoning by strychnia and its salts, arrives at the opinion, that the best antidotes are tannic acid and tannin, chlorine, and the tinctures of iodine and bromine. Chlorine, he maintains, attacks the strychnia even when it is diffused through the system, for he found that in rabbits poisoned with the sulphate of the alkaloid, on being made to inhale chlorine gas in quantity, such as was not sufficient in itself to kill, the convulsions were retarded, and were milder when they occurred; death also was less rapid. The author further observed, that when strychnia was exhibited with pyrogallic acid, the convulsion was retarded for the space of half an hour, by comparison with other experiments in which the alkaloid was given

by itself. Professor Bellini believes that this arrest in symptoms is not dependent on the acid acting chemically on the strychnia, but only through the astringent effects produced by the acid on the mucous membrane of the stomach, whereby the absorption of the poison is rendered difficult. The same author, dwelling on the frog-test for strychnia, asserts that this test is not to be trusted, inasmuch as other poisons produce the tetanic symptoms, although in a lesser degree. He adds, in speaking of the effects of the antidotes to which reference has been made, that he trusts his results will have a bearing not only on the treatment of strychnine tetanus, but on traumatic and idiopathic tetanic disease.—*British Medical Journal, Nov.* 21, 1863, *p.* 552.

155.—BROMIDES IN THE WATER OF THE DEAD SEA.

Some recent analyses of the water of the Dead Sea, taken from near the embouchure of the Jordan, laid by M. Roux before the Academy of Sciences, show the extraordinary quantity of 206 grammes of salts per litre (3090 grains in $1\frac{3}{4}$ pint imperial). No mineral water is so loaded with saline matter or contains so much bromine. It is probable, says M. Roux, that the enormous proportion of bromide of magnesium which it contains may impart to it some special therapeutical properties. A cubic metre of this water contains more than three kilogrammes of the bromide, and it would be of great interest to try its effects in scrofulous cachexia, inveterate syphilis, rickets, disease of the bones, chronic affections of the respiratory organs, &c.—*Med Times and Gazette, Oct.* 24, 1863, *p.* 439.

INDEX TO VOL. XLVIII.

	PAGE.
Abscess, hepatic, Dr. Cameron on the treatment of	69
Acne, rosacea, treatment of	142
Aconitine, on the preparation of	xl
Actual cautery, M. Nelaton's substitute for the	358
Acute rheumatism, Dr. Inman on the treatment of	12
Adams, Dr. A. L., his notes for invalids proceeding to Egypt	327
Alcoholic stimulants in the prevention and treatment of convulsion	29
Alkaline lotions, employment of in ezema	151
Alston, Dr. J., on sea-sickness	369
Amaurosis, Mr. Hart on tobacco-smoking as a cause of	214
——— produced by tobacco, Mr. Wordsworth on	212
Anæmic sphacelus of the fingers and toes	159
Anæsthetic, Dr. Arnott's mode of using congelation as an	372
Aniline and nitrobenzole, physiological properties of	383
Anderson, Dr. T. M'Call, on eczema of the external auditory passages	215
——— on the treatment of eczema	144
Aphonia, Dr. Mackenzie on its treatment by galvanism	49
Arnott, Dr. J., on an improved mode of using congelation	372
Arsenic, its employment in eczema	149
Articular extremities of bones, Mr. Bryant on inflammation of the	93
Artificial teeth, Dr. Wells on the ill effects of red vulcanite used for	357
Assimilation, defective, Dr. Pavy on its influence on the urine	323
Asthma, Dr. M'Veagh on the use of datura tatula in	59
——— Dr. Sanderson on	57
Atropia, Dr. Fleming on the action and uses of	363
Atropine paper, Mr. Streatfield on the use of	211
Bader, Dr. C., on the operation of syndectomy	177
Barnes, Dr. R., on the broncho-pneumonia of lying-in women	281
——— on the thrombosis and embolia of lying-in women	273
——— on the treatment of retroflexion of the uterus	262
Barton, Dr. J. K., his case of traumatic tetanus	34
Barwell, Mr. R., on disease of the hip-joint	83
——— on the treatment of hip-joint disease	384
Beale, Dr. L. S., on depletion and excessive (?) stimulation	16
Beck, Dr. J. W., on the administration of secale cornutum	244
Belladonna and sulphate of zinc in hooping-cough	318
Bell, Dr. J. H., his case of ruptured vagina during labour	225
Bellini, Prof. R., on the antidotes for strychnia	390
Bennet, Dr. J. H., on the influence of sudden change of climate	374
Bennett, Dr. E. P., his method of plugging the vagina	258
Bennett, Dr. J. H., on the pathology of tubercle	53
Berncastle, Dr., his treatment of snake-bite	350
Billon, Dr. M., on the treatment of ulcers about the nails	143
Bismuthi, liquor, Mr. Schacht's improved preparation of	342
Bladder, Prof. Fergusson's case of extraction of a bougie from the	126
Bloodletting in certain cases of convulsion	29
——— in the treatment of puerperal peritonitis	286
Bougie, Prof. Fergusson's case of extraction of, from the bladder	126
Bougies, M. Nelaton on vulcanized caoutchouc for	126
Bowen, Dr. F., on the prevention of pitting after small-pox	164

PAGE.

Bowman, Dr. W. E., his cheap spirometer 47
Bromide of ammonium, its use in hooping-cough 321
Bromides in the water of the Dead Sea 391
Bromine, solution of, Dr. Smith's formula for 355
Bronchial tubes, Dr. Gairdner on the deobstruent function of the 64
Bronchitis, acute, sedative action of the Calabar bean in 200
——— acute, use of tannin in 52
Broncho-pneumonia of lying-in women, Dr. Barnes on the 281
Brown, Mr. I. B., his case of retained menses from atresia vagina 295
——— on ovariotomy and its results 298
Bryant, Mr. T., on epithelioma, or epithelial cancer 23
——— on hare-lip 110
——— on inflammation of the epiphyses 93
——— on the recurring fibroid tumour 23
——— on some points in the pathology of tumours 20
Bursæ mucosæ, Prof. Inzani on the importance of tapping 385
Butcher, Mr. R. G., on an unusual form of double hare-lip 103
——— on excision of the knee-joint 86

Calabar bean, Dr. Fraser on the preparations and therapeutical uses of .. 199
——————— Dr. Ogle on some effects of its application to the eye 206
——————— Dr. Robertson on its uses in ophthalmic diseases 202
——————— Dr. Wells on its effects on the accommodation of the eye .. 195
——————— Mr. Hart's case of mydriasis treated by the 204
——————— Mr. Nunneley on its employment in prolapsus of the iris .. 203
Calvert, Dr. C., on the therapeutic properties of carbolic acid 367
Cameron, Dr. J. C , on the treatment of acute hepatitis 69
Cancer, epithelial, Mr. Bryant on 23
Carbolic acid, Dr. Calvert on the therapeutic properties of 367
Carbuncle, Dr. Pattison on the use of carbolic acid in 367
——————— Mr. Prichard on the caustic treatment of. 154
Carter, Mr. R. B., his case of death from subcutaneous injection of a nævus .. 99
——— on iridectomy in ulceration of the cornea 192
Castle, Dr. W. H., his treatment of sore nipples 272
Catarrhal ophthalmia, Dr. Henderson on 191
Catheterism in cases of hypertrophy of the prostate 124
Catheters, use of vulcanized caoutchouc for 126
Caustic, Mr. Prichard on the treatment of carbuncle by 154
Caustic-holder, Mr. Ellis's new instrument for use in uterine disease 315
Cauterisation, M. Nelaton's new method of 358
Cellulitis, pelvic, in a case of ruptured vagina 225
Chisholm, Prof., his operation for hernia 115
Chloroformic anodyne, Dr. Harley's case of poisoning by 343
Chloroform, Dr. Johns on its injurious effects in labour 243
——————— its advantages in puerperal convulsions 236
Cholera, Dr. Wise on the hemostatic treatment of 19
Chorea, Dr. Kirkes on the treatment of 31
——— treated by alcoholic stimulants 29
Cinchonine, its substitution for quinine, to detect 343
Citrate of ammonia in cases of irritable bladder 81
Clay, Dr. C., on anti- and retro-version of the uterus 260
Clay as a dressing for sores 159
Climate, Dr. Bennet on the influence of sudden change of 374
——— of Egypt, Dr. Adams on the 332
Cod-liver oil and iron, their efficacy in eczema 146
Collodion with glycerine in erysipelas, preparation of 357
Congelation as an anæsthetic, Dr. Arnott's improved method of using .. 372
Conjunctiva, Dr. Sheraton on tannin in inflammatory affections of the .. 186
Convulsion, Dr. Radcliffe on the therapeutics of 25
Convulsions, puerperal, Mr. Jones on the treatment of 234
——————— puerperal, advantages of chloroform over bleeding in 236
——————— puerperal, cases treated with and without bleeding 241
Cornea Mr. Carter on iridectomy in destructive ul ceration of the 192
——— vascular, Dr. Bader on syndectomy in 178

PAGE.

Cornea, vascular, with granular lids, Mr. Lawson's case of 175
Corrosive sublimate poisoning, Dr. Johnson on gold dust and iron filings in .. 347
Critchett, Mr. G., on the operation of abscission in staphyloma 166
Croup, Dr. Hamilton on the treatment of 317
Cyanide of potassium, Dr. Davanne on poisoning by 353

Datura tatula, its use in the treatment of asthma 59
Davanne, Dr., on poisoning by cyanide of potassium 353
Dead, apparently, Royal Humane Society's instructions for restoring the .. 340
—— body, Dr. Richardson's attempt to restore the colour of a putrid .. 336
Dead Sea, M. Roux on the bromides of the 391
Delirium tremens, Dr. Miller on its treatment by digitalis 34
—————— sedative action of the Calabar bean in 200
Delivery by spontaneous evolution, Dr. Hodges's case of 255
Depletion and excessive (?) stimulation, Dr. Beale on 16
Desormeaux, M., his endoscope, or urethroscope 134
Diabetes, Dr. Venables on 75
Diabetic sugar, MM. Trousseau and Dumontpalier's new test for 80
Dickenson, Mr. J. J., his case of inguinal hernia 115
Digitalis in delirium tremens, Dr. Miller on 34
Diphtheria, Mr. Turner on the use of carbolic acid in 368
Disinfectant, Dr. Richardson on iodine as a 356
Dislocation of the thumb at the metacarpo-phalangeal joint 96
Duncan, Dr. J. M., on the internal surface of the uterus after delivery .. 287
Dupre, Dr. A., his observations on the iodic test for morphia 359
Dysentery, Dr. Henderson on the efficacy of mineral acids in 67

Ear, Dr. M'Call Anderson on eczema of the external passages of 215
Eczema, Dr. M'Call Anderson on the constitutional treatment of 144
——— Dr. M'Call Anderson on the local treatment of xxv
——— Dr. Wallace on weak alkaline lotions in 151
——— meatus, Dr. M'Call Anderson on 215
——— with gouty complication, treatment of 140
Egypt, Dr. Adams's notes referring to invalids proceeding to 327
Ellis, Mr. R., on the action of nitrate of silver 312
Embolia of lying-in women, Dr. Barnes on the 277
Endoscope, M. Desormeaux's, its application in diseases of the urinary passages 134
Epilepsy, Dr. Radcliffe on the treatment of 25
——————— syphilitic, Dr. Ramskill's case of 33
Epiphyses, Mr. Bryant on inflammation of the 93
Epithelioma, or epithelial cancer, Mr. Bryant on 23
Ergot, case of premature labour induced by 233
Erysipelas, Dr. Smith's preparation of collodion with glycerine in 357
——————— sedative action of the Calabar bean in 200
Excision of the knee-joint, Mr. Butcher on 86
——— of the knee-joint in children, Mr. Smith on 90
Expectorant remedies, Dr. Gairdner on the action of 60
Eye, Dr. Wells on the effects of Calabar bean on the accommodation of the .. 195
—— operations, Mr. Streatfeild's forceps to fix the globe in 172
Eyelids, Mr. Vose Solomon on syphilitic tubercle of the 333
——— granular, Mr. Lawson's case of 175

Fergusson, Prof. W., on the extraction of a bougie from the bladder 126
Fever, eruptive, in puerperal patients, Prof. Simpson on 270
—— rheumatic, Dr. Nevins on the treatment of 9
—— typhoid, Dr. Henderson on hydrochloric acid in 68
Fistulæ, Mr. Turner on the use of carbolic acid in 368
Fleischmann, Mr. A., on the modern treatment of syphilis 222
Fleming, Dr. A., on the action and uses of atropia 363
Forceps, Dr. Gayton's, and mode of securing the handles during delivery .. 251
——— Mr. Streatfeild's, to fix the globe in eye operations 172
Fraser, Dr. T. R., on the ordeal bean of Calabar 199
Fuller, Dr. H. W., on gout, rheumatism, rheumatic gout, and sciatica .. 1

PAGE.

Fuller, Dr. H. W., on the treatment of hooping cough 320
Fungus hematodes, Dr. Pattison on the efficacy of carbolic acid in 369
Furnivall, Mr. W., his case of triplets 257

Gairdner, Dr. W. T., on the action of expectorant remedies 60
Gall-stone colic, Dr. Thudichum on 73
Galvanism, its direct application to the vocal cords in aphonia 49
——— its use in a case of opium poisoning 352
Garraway, Mr. E., on belladonna and sulphate of zinc in hooping cough .. 318
Gayton, Dr. W., on securing the handles of forceps during delivery 251
Gibb, Dr. G. D., on the treatment of hooping cough 321
Giordano, Prof., on induction of premature labour by nitrate of silver .. 234
Gold dust and iron filings an antidote to corrosive sublimate 347
Gout, Dr. Fuller on 1
——— Dr. Ross on the treatment of skin diseases caused by 139
Greenhalgh, Dr., on misplacements of the uterus 261
Gymnastic exercise, its efficacy in chronic convulsive disorder 25

Hamilton, Dr. G., on the treatment of the throat affection in scarlatina .. 316
Hare-lip, Mr. Bryant on 110
——— Mr. Butcher's operation on an unusual form of 103
Harley, Dr. G., his case of poisoning by chloroformic anodyne 343
Hart, Mr. E., his case of mydriasis treated by Calabar bean 204
——— on smoking as a cause of optic atrophy 213
——— on the treatment of purulent ophthalmia 189
Hatrick, Dr. W. R., on the treatment of cases of poisoning 345
Hematocele, pelvic, Dr. M'Clintock on 264
Hemorrhage, Dr. Wise on the hemostatic treatment of 18
Hemorrhoids, Mr. Turner on the use of carbolic acid in 368
——— and prolapsus, Mr. H. Smith on the use of clamp in 117
Henderson, Dr. J., on catarrhal ophthalmia 191
——— on the mineral acids in dysentery 67
Hepatitis, acute, Dr. Cameron on the treatment of 69
Hernia, Mr. Wood's operation for the radical cure of 386
——— inguinal, Mr. Dickinson on Prof. Chisholm's operation for 115
Higginbottom, Mr. J., on nitrate of silver 354
——— on the prevention of pitting in small-pox 165
Hilton, Mr. J., on the influence of physiological rest in pericarditis 41
——— on the treatment of onanism 137
Hip-joint disease, Mr. Barwell's splint for the treatment of 83
——— disease, Mr. Barwell on the treatment of 384
Hodges, Dr. R., case of delivery by spontaneous evolution 255
Holt, Mr. B., his operation for varicocele by the wire ligature 130
Hooping-cough, Dr. Fuller on belladonna and sulphate of zinc in 320
——— Dr. Gibb on bromide of ammonium in 321
——— Mr. Garraway on belladonna and sulphate of zinc in 318
Hutchinson, Mr. J., on inherited syphilis 224
Hydrochloric acid, its use in the treatment of dysentery 68
Hypertrophy of the prostate, Mr. H. Thompson on catheterism in 124

Impregnation, Dr. Packman on 227
Inflammation, Dr. Hughes Bennett on xi
Inguinal hernia treated successfully by Prof. Chisholm's method 115
Inherited syphilis, Mr. Hutchinson on the signs of 224
Inman, Dr. T., on the treatment of acute rheumatism 12
Inzani, Prof., on the importance of tapping bursæ mucosæ 385
Iodine, as a dedoriser and disinfectant 356
——— tincture of, its use in arthritis 132
Iridectomy in destructive ulceration of the cornea 192
Iris, prolapsus of, Mr. Nunneley on the use of the Calabar bean in 203
Iritis, use of the Calabar bean in 201
Irritable bladder, Dr. Meade on the use of citrate of ammonia in 81
——— stomach, anæsthetic action of the Calabar bean in 200

PAGE.

Jones, Mr. W. W., on the treatment of puerperal convulsions 234
Johns, Dr. R., on the injurious effects of chloroform inhalation during labour.. 241
Johnson, Dr. C., his case of poisoning by corrosive sublimate 347
Joints, distended, Prof. Inzani on the importance of tapping 385

Keiller, Dr. A., on induction of labour with caoutchouc bags 228
Kirkes, Dr. W. S., on the treatment of chorea 30
Knee-joint, Mr. Butcher on excision of the 86
——— Mr. Smith on resection of, in children 90

Labour, on the injurious effects of chloroform inhalation during 243
——— premature, Prof Giordano on its induction by nitrate of silver .. 234
——— premature, Dr. Keiller on inducing with cautchouc bags 228
——— premature, Dr. Ramsbotham on its induction by ergot 233
——— protracted, Dr. Murphy on delivery of the child in 247
——— tables of mortality in natural protracted labours and in forceps cases 250
Lachrymal duct, Mr. Haynes Walton on 184
Laryngoscope, Mr. Mason's improved 101
Lawson, Mr. G., his case of vascular corneæ and granular lids 175
——— on the treatment of strabismus at Moorfields 182
Lepra and psoriasis, Mr. Nayler on the treatment of 152
Letheby, Dr., on the physiological properties of nitrobenzole and aniline .. 388
Liquor bismuthi, Mr. Schacht's preparation of 342
Liver, Dr. Wilks on syphilitic formations in the 220

Mackenzie, Dr. M., on the treatment of aphonia by galvanism 49
Mason, Mr. F., description of his improved laryngoscope 101
M'Clintock, Dr. A. H., on pelvic hæmatocele 264
M'Nab, Dr. J., on chloroform in puerperal convulsions 236
M'Veagh, Dr. J. F., on the use of datura tatula in asthma 59
Max, M. O., on the use of tincture of iodine in urethritis 132
Meade, Dr. R. H., on the use of citrate of ammonia in irritable bladder .. 81
Medicines, Dr. Nelson on the action of 376
Menses, retained, of two year's duration, from atresia vaginæ 295
Mercurial fumigation in syphilis, Mr. Fleischmann on 222
Mialhe, M., his formula for tartar emetic plaister 359
Miller, Dr. J. W. M., on digitalis in delirium tremens 34
Mitchell, Mr. J. T., on the nature and treatment of puerperal peritonitis .. 282
Morphia, Dr. Dupre on the iodic test for.. 359
Murphy, Dr. E. W., on delivery of the child in protracted labour 247
——— on the treatment of placenta prævia 246
Mydriasis, Mr. Hart's case treated by solution of Calabar bean 204
——— use of the Calabar bean in 201
Myrtle, Dr. A. S., on a case of anæmic sphacelus 159

Nævus, Mr. Carter's case of death following subcutaneous injection of a .. 99
Nails, ingrowing, Dr. Billon's treatment of 143
Nayler, Mr. G., on the treatment of psoriasis and lepra 152
Nelaton, M., his new method of cauterisation 358
——— on vulcanized caoutchouc bougies and catheters 126
Nelson, Dr. D., on the action of medicines 376
Neuralgic affections, anæsthetic action of the Calabar bean in 200
Nevins, Dr. J. B., on the treatment of rheumatic fever 9
Nicotine, Dr. Barton on a case of traumatic tetanus treated by 34
Nipples, sore, Dr. Castle's treatment of 272
Nitrate of silver, Mr. Ellis on its properties, and instrument for using .. 312
——— Mr. Higginbottom on the new preparations of 354
——— its use to prevent pitting after small-pox 164
Nitrobenzole and aniline, Dr. Letheby on the physiological properties of .. 388
Nunneley, Mr. T., on the use of the Calabar bean in prolapsus of the iris .. 203

Obstetric forceps, Dr. Gayton's, and mode of securing the handles 251
Ogle, Dr. J. W., on galvanism in opium poisoning 352
——— on some effects of the application of the Calabar bean to the eye .. 206
Oldham, Dr., on the use of uterine pessaries 263

PAGE.

Onanism, Mr. Hilton on the treatment of 137
Ophthalmia, catarrhal, Dr. Henderson on 191
——— purulent, Mr. Hart on the treatment of 189
——— purulent, Mr. Wordsworth on its treatment in infants 188
Ophthalmic diseases, Dr. Robertson on the use of the Calabar bean in .. 202
Opium poisoning, Dr. Hatrick on the treatment of 345
——— poisoning, Dr. Ogle on galvanism in 352
——— as a remedy in some cases of epilepsy 28
Optic atrophy, Mr. Hart on smoking as a cause of 213
Ovarian tumour, Mr. Henry Smith's case of 291
Ovariotomy, Mr. Baker Brown on the operation and its results 298
——— Mr. Spencer Wells on the operation of 306
Oxygen, ammonia, and bromoform, inhalation of in epilepsy, &c. 33

Packard, Dr. J. H, on the radical cure of varicocele 131
Packman, Dr. F. J. W., on impregnation 227
Pannus, Dr. Bader on the operation of syndectomy for 177
Pavy, Dr. F. W., on assimilation, and its influence on the urine 323
Pelvic hematocele, Dr. M'Clintock on 264
Pennefather, Mr. J. P., his case of extra- and intra- uterine pregnancy .. 252
Perchloride of iron, case of death following subcutaneous injection of 100
Pericarditis, Mr. Hilton on the influence of physiological rest in 41
Peritomy, operation of, in vascular cornea 176
Peritonitis, puerperal, Mr. Mitchell on the treatment of 284
Pessary, uterine, Dr. Wilkie's double-jointed 307
Pessaries, on the use of, in retroversion of the uterus 260
——— uterine, Dr. Tanner on the use of medicated 310
Phenic acid, on the action of xlvi
Phosphorus, its efficacy in epilepsy and chronic convulsive disorders 26
Pitting after small-pox, Dr. Bowen on the prevention of 164
——— after small-pox, Mr. Higginbottom on the prevention of . .. 165
Placenta prævia, Dr. Murphy on the treatment of 246
——— prævia, Dr. Williams's case of 247
Pneumonia, Dr. Beale on depletion and excessive stimulation in 17
Poisoning, Dr. Hatrick on the treatment of cases of 345
——— by chloroformic anodyne, Dr. Harley on 343
——— by corrosive sublimate, Dr. Buckler's treatment of 347
——— by cyanide of potassium, Dr. Davanne on 353
——— by opium, Dr. Ogle on galvanism in 352
Polycystic disease of right ovary with ulceration, Mr. Henry Smith on .. 291
Polypus uteri, Prof. Simon's method of extirpating large 291
Pregnancy, Mr. Pennefather's case of coexisting extra- and intra- uterine .. 252
Premature labour, Dr. Keiller on its induction by caoutchouc bags 228
——— labour, Dr. Ramsbotham on its induction by ergot 233
——— labour induced by means of nitrate of silver 234
Presentation of right arm and shoulder, delivery by spontaneous evolution .. 255
Prichard, Mr. A., on the treatment of carbuncle 154
Priestley, Dr. W. O., on the condition of the uterus after delivery 290
Prolapsus ani, Mr. H. Smith on the use of the clamp in 118
——— uteri, Dr. Greenhalgh on the treatment of 262
——— of the iris, use of the alkaloid of the Calabar bean in 203
Prosser, Mr. R., his cases of puerperal convulsions treated with and without bleeding 241
Prostate, hypertrophy of, Mr. H. Thompson on catheterism in 124
Protracted labour, Dr. Murphy on delivery of the child in 247
Psoriasis and lepra, Mr. Nayler on the treatment of 152
——— tar ointment as a local application in 141
——— with gouty diathesis, treatment of 140
Puerperal convulsions, Dr. M'Nab on chloroform in 236
——— convulsions, Mr. Jones on the treatment of 234
——— convulsions, Mr. Prosser's cases treated with and without bleeding .. 241
——— patients, Prof. Simpson on eruptive fevers in 270
——— peritonitis, Mr. Mitchell on the nature and treatment of 282
Pulmonary affections, on the action of expectorant remedies in 62
Pupil, Dr. Ogle on some effects of Calabar bean on the 206

PAGE.

Pupil, effects of solution of the Calabar bean on the 195
——— power of the Calabar bean in contracting 201
Purulent ophthalmia, Mr. Hart on the treatment of 189
——— ophthalmia in infants, Mr. Wordsworth on 188
Putrid dead body, attempt to restore the natural appearance of a 336

Quinine, sulphate of, to detect the adulteration of 343

Radcliffe, Dr. C. B., on the therapeutics of convulsion 25
Ramsbotham, Dr. F. H., on induction of premature labour by ergot 233
Ramskill, Dr., on the inhalation of oxygen in epilepsy 32
Recurring fibroid tumour, Mr. Bryant on the 23
Retained menses from atresia vaginæ, Mr. Brown's case of 295
Retention of urine in cases of tight stricture, new catheter for 122
Retroversion of the uterus, Dr. Clay on 260
Rheumatic fever, Dr. Nevins on the treatment of 9
——— fever, sedative action of the Calabar bean in 200
——— gout, Dr. Fuller on 1
Rheumatism, acute, Dr. Inman on the efficacy of lime-juice in 14
Richardson, Dr. B. W., his attempt to restore a putrified dead body 336
——— on iodine as a deodoriser and disinfectant 356
Robertson, Dr. D. A., on the Calabar bean as a new ophthalmic agent .. 202
Ross, Dr. G., on skin diseases caused by gout and alcoholism 139
Routh, Dr., on the treatment of retroversion of the uterus 260
Royal Humane Society's instructions for restoring the apparently dead .. 340

Saccharine urine, Dr. Venables on 76
Sanderson, Dr. J. B., on asthma 57
Scarlatina, Dr. Hamilton on the treatment of the throat affection in 317
Schreber, Dr., on clay as a dressing for sores 159
Sea-sickness, Dr. Alston on 369
Secale cornutum, Dr. Beck on the administration of 244
Sesquichloride of iron, its efficacy in ulcers of the nails 143
Shaw, Dr. W., his case of snake-bite 351
Sheraton, Dr. G. R., on tannin in inflammatory affections of the conjunctiva .. 186
Simpson, Prof. J. Y., on eruptive fevers in puerperal patients 270
Silver, nitrate of, Mr. Ellis on the action of 312
——— nitrate of, Mr. Higginbottom on the new preparations of 354
Simon, Prof., on a new method of extirpating large uterine polypi 291
Skin diseases from gout or alcoholism, Dr. Ross on the treatment of 139
Small-pox, Dr. Bowen on the prevention of pitting after 164
——— Mr. Higginbottom on the prevention of pitting after 165
Smith, Dr. L., his formula for a solution of bromine 355
Smith, Mr. H., his case of polycystic disease of the right ovary 291
——— on the use of the clamp in hemorrhoids and prolapsus 117
Smith, Mr. T., on resection of the knee-joint in children 90
Snake-bite, Dr. Berncastle's treatment of 350
——— Dr. Shaw's case of 351
Solomon, Mr. J. V., on syphilitic tubercle of the eyelid 333
Sore nipples, Dr. Castle's treatment of 272
Sores, Dr. Schreber on the use of clay as a dressing for 159
Sphacelus, anæmic, Dr. Myrtle's case of 159
Spirometer, Dr. Bowman's method of constructing a cheap 47
Staphyloma, Mr. Critchett on the operation of abscission in 166
Stimulants in serious cases of acute disease, Dr. Beale on 17
Stomach-pump, Dr. Hatrick on the use of the 346
Strabismus, Dr. Todd's method of operating for 179
——— Mr. Lawson on its treatment at the Royal Ophthalmic Hospital .. 182
Streatfeild, Mr. J. F., his forceps to fix the globe in operations on the eye .. 172
——— on the use of atropine paper 211
Stricture catheter, Dr. Watson's new probe-pointed 122
——— of the lachrymal duct, Mr. Walton on 184
Strychnia, Prof. Bellini on the antidotes for 390
Sugar, diabetic, tincture of iodine as a test for 80

PAGE.

Syndectomy, Dr. Bader on the operation of 177
Syphilis, Mr. Fleischmann on the modern treatment of 222
——— inherited, Mr. Hutchinson on the signs of.. 224
Syphilitic affections of internal organs, Dr. Wilks on 217
——— tubercle of the eyelid, Mr. Vose Solomon on 333

Tanner, Dr. T. H., on the use of medicated uterine pessaries 310
Tannin, M. Woillez on its use in diseases of the respiratory organs 52
——— in inflammatory affections of the conjunctiva 186
Tartar emetic plaister, M. Mailhe's formula for 359
Tetanus, traumatic, Dr. Bartou's case treated by nicotine 34
Thompson, Mr. H., on catheterism in hypertrophy of the prostate 124
Thrombosis and embolia of lying-in women, Dr. Barnes on 273
Thudichum, Mr. J. L. W., on gall stones 73
Thumb, Mr. Wordsworth on dislocation at the metacarpo-phalangeal joint .. 96
Tincture of iodine, its use in the treatment of urethritis 132
Tobacco smoking, Mr. Wordsworth on amaurosis produced by 212
——— smoking as a cause of optic atrophy 213
Todd, Dr. A., his new operation for strabismus 179
Toe-nail, ingrowing, efficacy of sesquichloride of iron in 143
Triplets, Mr. Furnivall's case of 257
Tubercle, Dr. Bennett on the pathology of 53
——— syphilitic, of the eyelid, Mr. Solomon on.. 333
Tuberculosis, Dr. Bennett on the treatment of 55
Tumours, Mr. Bryant on the pathology and diagnosis of 20
Tumour, recurring fibroid, Mr. Bryant on 23
Typhoid fever, Dr. Henderson on the use of hydrochoric acid in 68

Ulceration of the cornea, Mr. Carter on iridectomy in 192
Ulcers, Mr. Turner on the use of carbolic acid in 368
Urethritis, M. Oscar Max on the use tincture of iodine in 132
Urine, Dr. Pavy on the influence of assimilation on the 323
Uterine pessaries, Dr. Tanner on medicated 310
——— pessary, Dr. Wilkie's double-jointed 307
——— polypi, Prof. Simon's mode of extirpating large 291
Uterus, Dr. Duncan on state of the internal surface after delivery 287
——— retroflexion of, Dr. Graily Hewitt on the treatment of 260
——— retroflexion of, Dr. Routh on the treatment of 261
Vagina, Dr. Bennett's new method of plugging 258
——— atresia of, Mr. Brown's case of retained menses from 295
——— ruptured, Dr. Bell's case of 225
Varicocele, Dr. Packard on the radical cure of 131
——— Mr. Holt on its treatment by the wire ligature 130
Venables, Dr. R., on diabetes 75
Vulcanite, red, in dentistry, Dr. Wells on the ill effects of 357

Wallace, Dr. J., on the treatment of eczema 15
Walton, Mr. H., on stricture of the lachrymal duct.. 184
Watson, Dr. P. H., his new probe-pointed stricture catheter 122
Weight and height in the human body, relations of 373
Wells, Dr. E., on red vulcanite in dentistry 357
Wells, Dr. J. S., on the effects of solution of Calabar bean on the eye .. 195
Wells, Mr. T. S., on the operation of ovariotomy 306
Wilkie, Dr. D. E., on a double-jointed uterine pessary 307
Wilks, Dr. S., on syphilitic affections of internal organs 217
Williams, Dr. D. M., his case of placenta prævia 247
Wire ligature, its use in the treatment of varicocele 131
—— ligature, operation for the cure of varicocele by 130
Wise, Dr. T. A., on the homœopathic treatment of cholera, hemorrhage, &c. .. 18
Woillez, M., on tannin in diseases of the respiratory organs 52
Wood, Mr. J., his operation for the radical cure of hernia 386
Wordsworth, Mr. J. C., on amaurosis produced by tobacco 212
——— on dislocations of the thumb 96
——— on purulent ophthalmia in infants 188

D. I. ROBERTS, PRINTER, 14, TRINITY STREET, LEEDS.